

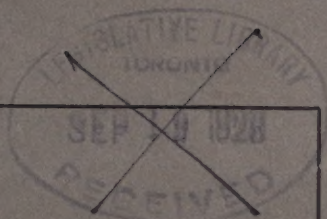
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THE ROCKEFELLER FOUNDATION

Annual Report

1927

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THE [✓]ROCKEFELLER FOUNDATION
Annual Report for 1927

The
Rockefeller Foundation
Annual Report

1927

The Rockefeller Foundation
61 Broadway, New York

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THE ROCKEFELLER FOUNDATION

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1927

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RAY LYMAN WILBUR

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Treasurer

LOUIS GUERINEAU MYERS

Comptroller

GEORGE J. BEAL

¹ Died December 1, 1927

THE ROCKEFELLER FOUNDATION

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1928

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President

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Vice-President in Europe

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Vice-President in the Far East

ROGER S. GREENE

Director International Health Division

FREDERICK F. RUSSELL, M.D.

Director Division of Medical Education

RICHARD M. PEARCE, M.D.

Secretary

NORMA S. THOMPSON

Treasurer

LOUIS GUERINEAU MYERS

Comptroller

GEORGE J. BEAL

¹ Resigned June 30, 1928

To the Members of the Rockefeller Foundation:
Gentlemen:

I have the honor to transmit herewith the detailed reports for the period January 1, 1927, to December 31, 1927, of the Secretary and the Treasurer of the Foundation, the Director of the International Health Division, and the Director of the Division of Medical Education.

A summary review of the work of the Rockefeller Foundation for the year 1927, prepared by the President, was issued in April, 1928, and widely distributed in both English and French editions.¹

During the year a reorganization of the Rockefeller Foundation was effected. The China Medical Board ceased to be an administrative agency; the International Health Board as such went out of existence; the Division of Studies was dissolved; and all operative functions were assigned to two divisions: the International Health Division and the Division of Medical Education.

Three vice-presidencies were created. Edwin R. Embree was appointed vice-president in the home office, Selskar M. Gunn vice-president in

¹ Copies of these publications may be secured without charge on application to the Rockefeller Foundation, 61 Broadway, New York.

Europe, and Roger S. Greene vice-president in the Far East.

With deep regret I report the deaths, during 1927, of Herbert S. Hadley, a trustee of the Foundation; Dr. Francis Peabody, formerly a member of the China Medical Board; and Dr. Adrian Stokes of the staff of the Foundation's Yellow Fever Commission in West Africa.

Respectfully yours,

GEORGE E. VINCENT

President

THE ROCKEFELLER FOUNDATION
Report of the Secretary

To the President of the Rockefeller Foundation:
Sir:

I have the honor to submit herewith my report for the period January 1, 1927, to December 31, 1927.

Respectfully yours,

NORMA S. THOMPSON

Secretary



Map of world-wide activities of the



SECRETARY'S REPORT

The following were members and trustees of the Rockefeller Foundation during 1927:

MEMBERS

John G. Agar	John D. Rockefeller, Jr.
John W. Davis	Wickliffe Rose
David L. Edsall	Julius Rosenwald
Simon Flexner	Martin A. Ryerson
Raymond B. Fosdick	Frederick Strauss
Herbert S. Hadley ¹	George E. Vincent
Charles E. Hughes	George H. Whipple
Vernon Kellogg	William Allen White
Ray Lyman Wilbur	

The following were members of the executive and divisional committees during 1927:

EXECUTIVE COMMITTEE

The President, *Chairman*

John G. Agar	Vernon Kellogg
Simon Flexner	Wickliffe Rose
Raymond B. Fosdick	Frederick Strauss
Norma S. Thompson, <i>Secretary</i>	

DIVISIONAL COMMITTEE

INTERNATIONAL HEALTH DIVISION

The President, *Chairman*

Simon Flexner	Wickliffe Rose
Charles E. Hughes ²	William Allen White
Vernon Kellogg ³	

DIVISIONAL COMMITTEE

DIVISION OF MEDICAL EDUCATION

The President, *Chairman*

John W. Davis ²	Frederick Strauss
David L. Edsall ³	George H. Whipple ³
Vernon Kellogg ²	Ray Lyman Wilbur

¹ Died December 1, 1927.

² Resigned.

³ Elected May 25, 1927.

Officers of the Rockefeller Foundation during 1927 were:

John D. Rockefeller, Jr.	<i>Chairman, Board of Trustees</i>
George E. Vincent	<i>President</i>
Edwin R. Embree	<i>Vice-President in New York Office</i>
Roger S. Greene	<i>Vice-President in the Far East</i>
Selskar M. Gunn	<i>Vice-President in Europe</i>
Frederick F. Russell, M.D.	<i>Director, International Health Division</i>
Richard M. Pearce, M.D.	<i>Director, Division of Medical Education</i>
Norma S. Thompson	<i>Secretary</i>
Louis G. Myers	<i>Treasurer</i>
George J. Beal	<i>Comptroller</i>

Meetings

Regular meetings of the Rockefeller Foundation were held on February 23, May 25, and November 4, 1927. Fifteen meetings of the Executive Committee were held during the intervals between the regular meetings, to execute programs within general policies approved by the trustees.

Financial Summary

In the following financial statement is presented a summary of the receipts and disbursements of the Foundation in 1927. The table outlines in expenditures the work described in terms of aims and results in the main body of the report. In many instances payments involved sums appropriated in former years. On the other hand, in some instances payments represent but a portion of appropriations made during

1927, remainders of which will be paid during succeeding years. A full statement of the finances of the Foundation will be found in the report of the Treasurer, pages 295 to 357.

Statement of Receipts and Disbursements in 1927

<i>Receipts</i>	<i>Disbursements</i>
Balance from 1926 (including refunds during 1927 on prior year appropriations)	General Budget:
\$6,098,647	Central Administration \$626,232
Income during 1927 9,331,903	International Health Division 2,267,322
Transferred from principal to income in accordance with resolution of members, as of November 4, 1927 3,000,000	Division of Medical Education 2,188,298
	Capital Expenditures:
	Central Administration 1,943,005
	International Health Division 1,393,646
	Division of Medical Education 2,804,621
	<hr/> \$11,223,124
	Balance:
	Payable on 1927 and prior appropriations \$4,961,905
	Available for 1928 appropriations 2,245,521
	<hr/> 7,207,426
<hr/> \$18,430,550	<hr/> \$18,430,550
<hr/> <hr/>	<hr/> <hr/>

Summary of Expenditures in 1927

I. PUBLIC HEALTH

1. Regular program in control of hookworm infection, malaria, yellow fever, and in county health work; aid to state health services and bureaus for study and reform of health activities \$1,772,864
2. Health Organization of the League of Nations 146,348
3. Public health education
 - (a) Fellowships 250,853

(b) Study and training courses and travel of visiting scientists	\$63,504
(c) Schools and institutes of hygiene and public health	
Maintenance	
(1) London School of Hygiene and Tropical Medicine	30,580
(2) School of Hygiene, Warsaw, Poland	3,120
(3) Institute of Hygiene, São Paulo, Brazil	52
Buildings, equipment, or endowment	
(1) London School of Hygiene and Tropical Medicine	969,783
(2) State Institute of Hygiene, Oslo, Norway	100,627
(3) State Institute of Public Health, Prague, Czechoslovakia	95,055
(4) State Hygienic Institute, Budapest, Hungary	60,298
(5) Institute of Hygiene, São Paulo, Brazil	23,987
(6) School of Hygiene, University of Toronto	12,500
(7) School of Public Health, Harvard University	137,250
(8) School of Public Health, Zagreb, Yugoslavia	9,891
(9) Imperial College of Tropical Agriculture, Trinidad, British West Indies	4,872
(d) D. Anna Nery School of Nursing, Rio de Janeiro, Brazil. Building and equipment.	99,334
(e) School for Native Medical Assistants, Suva, Fiji. Buildings.	4,800
	<hr/>
	\$3,785,718

II. MEDICAL EDUCATION

1. Medical institutions

Maintenance

(a) Peking Union Medical College	\$780,076
(b) Institutions in China other than the Peking Union Medical College	71,651
(c) Central Europe. Journals and apparatus	86,191
(d) American University of Beirut	40,000
(e) Chulalongkorn University, Siam	32,510
(f) University of Edinburgh	8,494
(g) Faculty of Medicine, São Paulo, Brazil	897

Buildings, equipment, or endowment	
(a) Free University of Brussels	\$849,267
(b) University College, London	573,978
(c) Peking Union Medical College	532,452
(d) Institute of Psychiatry, Munich	250,000
(e) State University of Iowa	225,000
(f) New York Academy of Medicine	73,208
(g) London Hospital Medical College	24,266
(h) University of Montreal	25,000
(i) University of Cambridge	22,369
(j) University of Strasbourg	17,252
(k) Chulalongkorn University	14,928
2. Premedical schools	71,554
3. Hospitals	52,304
4. Fellowships and scholarships	254,594
5. Visiting commissions and professors, surveys, and publications	26,624
6. American Medical Association. Toward publishing a Spanish edition of its <i>Journal</i>	9,639
7. Commission on Medical Education. Toward study of the medical curriculum in America	10,000
8. Field service: salaries and expenses	45,089
	<hr/>
	\$4,097,343
	<hr/>

III. MISCELLANEOUS

1. Human Biology	
(a) Mental hygiene	\$49,585
(b) National Research Council	
Research fellowships in biological sciences	79,411
<i>Biological Abstracts</i>	48,071
(c) State University of Iowa	
Research in physiology of the brain	15,000
(d) The Johns Hopkins University	
Biological research	58,000
(e) Yale University	
Promotion of anthropoid research	10,000
(f) Fellowships	28,161
(g) Australian National Research Council	
Anthropological studies	12,029
(h) University of Hawaii	
Study of race biology	20,000
(i) Bernice P. Bishop Museum, Honolulu	
Research in Polynesian anthropology	8,700
(j) Travel of visiting scientists, surveys	10,985
2. Nursing education	235,802
3. Fellowships in physics, chemistry, and mathematics	128,817

4. Hospital and dispensary service	\$66,265
5. Emergency fund, China	715
6. University of London	
Purchase of Bedford site	1,943,005
	<hr/>
	\$2,714,546

IV. ADMINISTRATION

1. Maintenance of New York, European, and Peking offices	\$557,517
2. Part interest in building occupied by Paris office	68,000
	<hr/>
	\$625,517
	<hr/>
	\$11,223,124

Funds and Property

As of December 31, 1927

PRINCIPAL FUND

Book value as of December 31, 1926 \$165,281,624

Add:

Transferred during 1927 from special fund	10,000
	<hr/>
	\$165,291,624

Deduct:

Amount transferred from principal to income in accordance with resolution of members, November 4, 1927	3,000,000
	<hr/>

Principal Fund as of December 31, 1927 .. \$162,291,624

LANDS, BUILDINGS, AND EQUIPMENT

In China:

Medical school lands, buildings, and equipment	\$9,213,396
Peking office: land and building	10,809

In New York:

Furniture and equipment of offices	52,461
--	--------

In Paris:

Part interest in building occupied by Paris office	68,000	<u>\$9,344,666</u>
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UNDISBURSED INCOME

General Income (For offsetting liabilities, see below)	\$7,207,426
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UNPAID APPROPRIATIONS AND PLEDGES

Unpaid appropriations for 1927 and prior years		\$4,961,905
Appropriations and pledges which become effective in 1928 and subsequent years:		
1928	\$8,798,377	
1929	4,066,378	
1930	2,004,938	
1931	319,217	
1932	208,775	
1933	106,285	
1934	80,958	15,584,928
		<u>\$20,546,833</u>

INTERNATIONAL HEALTH DIVISION

Report of the Director

To the President of the Rockefeller Foundation:
Sir:

I have the honor to submit herewith my report
as Director of the International Health Division
of the Rockefeller Foundation for the period
January 1, 1927, to December 31, 1927.

Respectfully yours,
FREDERICK F. RUSSELL

Director

INTERNATIONAL HEALTH DIVISION

I

It is through the International Health Division that the Rockefeller Foundation operates in the field of public health for the purpose of promoting "the well-being of mankind throughout the world." Convinced that greater and more lasting benefits will come through permanent governmental health organization than through independent private agencies, the division is primarily occupied in helping governments to develop and strengthen their own health work. In rendering such assistance emphasis is placed on certain important problems presenting outstanding needs and exceptional opportunities, such as, the combating of hookworm disease, malaria, and yellow fever, and the establishment of better rural health services.

The activities in which the Foundation cooperates depend for their effectiveness on adequate knowledge of the underlying scientific facts. The body of information on which the plans of operation are based requires constant enlargement and revision, and to meet this need the Foundation carries on research and provides for certain preliminary surveys in the areas in which work is to be undertaken. For example, it was

found advisable to postpone the consideration of the control of yellow fever in West Africa until field studies of epidemics could be made and the transmission of the disease by native mosquitoes could be definitely confirmed with the local virus. The flexibility of the organization permits a type of pioneer work often difficult, under present conditions, for governmental agencies to undertake.

There is another prerequisite to the successful development of public health work: the men who are to direct it must understand the underlying scientific principles and the methods of their application for the public good. The Foundation has assisted governmental health agencies to secure technical training for members of their staffs in preparation for specific future assignments by rendering possible study in schools of public health and inspection trips and conferences. A striking development during the year in the field of public health education has been the provision made by certain governments for the special training of their own health officials.

The scope of the Foundation's activities in the field of public health during 1927 was world wide. The yellow fever work of the year centered in West Africa, where important studies were carried on. In Brazil, where a minor outbreak of this disease occurring in 1926 seems now to

have subsided,¹ aid was given in controlling the breeding of the mosquito which transmits the infection. Contributions were made toward the maintenance of 268 county health organizations in twenty-three American states, to budgets for health work among the flood sufferers in eighty-five counties in six states in the Mississippi flood area, and to the development of local health programs in fourteen countries abroad. Malaria control demonstrations, surveys, or studies were conducted with the aid of the Foundation in eight of our Southern States and in sixteen foreign countries; and hookworm work was assisted in nineteen foreign countries.

Aid in furthering public health education was also extended to all parts of the world. Eight schools or institutes of public health, all situated outside of the United States, received funds. An extensive fellowship program by which assistance was given directly or indirectly to 242 men and women from thirty-one countries, was supplemented by aid to ninety government health officials and professors, enabling them to make study visits to the United States or foreign countries. Further work of this type was done through cooperation with the League of Nations in supporting international interchanges of

¹ Since March, 1928, cases of yellow fever have been reported in the states of Sergipe, Pernambuco, Bahia, and Rio de Janeiro, and the disease is still present in Rio de Janeiro as this report goes to press (July, 1928).

health workers. Another phase of this activity involved support to field stations in the United States and in Europe, in which health personnel were trained locally. There was a contribution to a conference of epidemiologists in the United States, and funds were made available for certain aspects of nursing education and school hygiene, chiefly abroad. In the United States field research work in respiratory diseases was begun.

II

Yellow Fever

Investigations in West Africa

The last half of the year 1927 saw rapid developments in the work of the West African Yellow Fever Commission. From the time of its arrival in West Africa in 1925 until May, 1927, the Commission had made extensive studies of the symptomatology and pathology of yellow fever in natives and Europeans. The results in general had shown the similarity of the disease in Africa and the Western Hemisphere. The lesions observed in gross and microscopic examinations of tissues obtained at autopsy were the same in both regions. Studies had been made also of the habits and distribution of the mosquito *Aedes aegypti*, the familiar stegomyia proven to be the vector of yellow fever in the Americas.

Early in 1927 the Commission and its advisers decided that a determined effort should be made

to find a laboratory animal susceptible to the disease, so that the method of transmission could be tested again and other studies undertaken. Toward the end of May some Indian crown monkeys (*Macacus sinicus*) and chimpanzees obtained by the Director were inoculated with blood from native yellow fever patients of Larteh near Accra, Gold Coast, where an outbreak occurred. The chimpanzees proved insusceptible, but a fatal disease resembling yellow fever developed in five out of six crown monkeys. Later some *Macacus rhesus* monkeys were obtained and one of them was inoculated with blood from a native yellow fever patient at Kpeve, Gold Coast. Infection resulted and the strain of the yellow fever virus thus obtained was transferred from monkey to monkey by inoculation of blood and also by the bites of mosquitoes of the species *Aedes aegypti*. Through the medium of the mosquito the disease was later carried from a European yellow fever patient to a monkey, and transferred a number of times from man to monkey through the inoculation of blood. Monkeys of the species *Macacus rhesus* proved highly susceptible. The disease affected them much as it does man.

The transfer of infection from monkey to monkey by means of mosquitoes was accomplished by allowing the insects to feed on an infected

monkey and after a suitable interval causing them to bite a normal animal. The usual interval allowed for the development of the virus in the mosquito was sixteen days or more, but experiments were not performed to determine the minimum incubation period necessary to enable the mosquito to transmit infection by biting. It appears that mosquitoes once infective usually remain so for life; one mosquito transmitted the disease to two monkeys ninety-one days after it had received the virus from an infected monkey. A very small dose (0.1 cc) of the serum of a West African convalescent from yellow fever, when inoculated into a monkey, was sufficient to prevent the development of yellow fever in the animal after inoculation with infective blood.¹

The *Leptospira icteroides* was not found in the blood or tissues of any of the many patients studied. Numerous cultures of the blood remained sterile and guinea-pigs could not be infected.

The achievements of the Commission were accompanied by a serious tragedy—the death from yellow fever of Dr. Adrian Stokes, one of its members. Dr. Stokes was granted leave for

¹ The results of the studies of the experimental transmission of yellow fever to monkeys (*Macacus rhesus*) were published in summary in the *Journal of the American Medical Association* for January 28, 1928. A fuller report appears in the *American Journal of Tropical Medicine* for March, 1928.

a period of six months by the Guy's Hospital Medical School of London to work with the Commission. Arriving in West Africa with Dr. Beeuwkes on May 25 he devoted himself with untiring energy to the work. On September 15 he became ill in Lagos, and he died on the 19th. He lived to see the success of the transmission experiments in which he had taken a leading part. The available evidence indicates that he contracted the disease while working with infected material in the Lagos laboratory.

Yellow fever was widespread on the west coast during 1927, as is shown on the map on page 31. Late in 1926 and early in 1927 it was current in Senegal, where it was especially prevalent among recently arrived Syrians. There were three foci: the regions of Saloum and Diourbel in the interior and the city of Rufisque on the coast. By the end of February this outbreak was over, but in May the disease appeared again and spread along the coast towns from Dakar to St. Louis. During the months from May to December 180 cases were reported. Dakar and Thies suffered particularly.

Scattered cases of yellow fever were reported from other French territories, namely, the Ivory Coast, Dahomey, and Togoland. Gambia and also Monrovia in Liberia reported the disease, and late in December cases were reported

DR. ADRIAN STOKES

Dr. Adrian Stokes, special member of the staff of the International Health Division of the Rockefeller Foundation, died in the service of the West African Yellow Fever Commission on September 19, 1927.

Born in 1887 of a family which had given several distinguished members to the medical profession of Ireland, Adrian Stokes was educated at Stevens Green School and Trinity College, Dublin. Even as an undergraduate he showed a flair for research; he was awarded the degree of Doctor of Medicine with first class honors in 1911. His advanced studies after graduation were pursued in Trinity College and for several months at the Rockefeller Institute for Medical Research in New York.

At the outbreak of the World War Dr. Stokes went to France with a Dublin medical unit. His war services included important research; the checking of epidemics of enteric fever, typhoid, and jaundice; improvements in the control of gas gangrene and in the treatment of gassed soldiers. His war record brilliantly revealed his capacity for investigation and his resourcefulness in both curative and preventive medicine.

Appointed first to a professorship in Trinity College Medical School, Dublin, and later to the Sir William Dunn Professorship of Pathology in Guy's Hospital Medical School, London, he soon showed remarkable abilities as a teacher. As a valued member of the first Rockefeller Yellow Fever Commission to West Africa, he went to Africa in 1920 to help make a preliminary reconnaissance. In the spring of 1927, with the consent of the authorities of Guy's Hospital Medical School, he accepted an invitation to spend six months investigating the yellow fever problem at the station of a second Rockefeller Commission to West Africa, which had been established in Lagos in 1925. From the moment of his arrival he attacked his work with characteristic zeal and untiring energy. Significant progress had been made when he came down with yellow fever, from which he died.

A keen sportsman, impulsive, warm-hearted, magnanimous in giving credit to students and collaborators—often to the extent of omitting his own name entirely—generous of time, energy, and money, sympathetic and loyal in relations with his fellows, Adrian Stokes filled the short span of his life with sound scientific work, fine acts of courage, and many deeds of human sympathy and devoted friendship.

His death on the firing-line of scientific advance was itself in keeping with his character as an investigator and a man. It is even possible that by losing his life he has made a vital contribution to the solution of the problem on which he was at work. Certain it is that in his life and death he has still further ennobled the profession to which he belonged and set still another stirring example for the inspiration of his colleagues.



DR. ADRIAN STOKES



Juju pot set up by a West African native outside his house to ward off evil spirits.

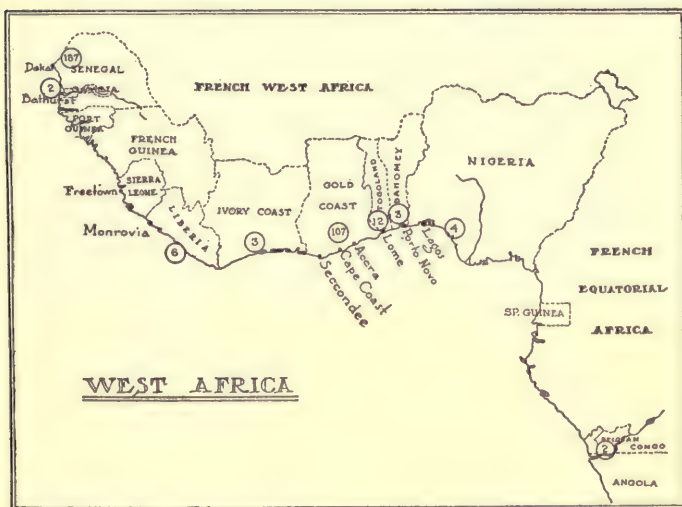


Close-up of the juju pot, which contained knives, floating eggs, bits of wood, and many mosquito larvae.



Headquarters of the Foundation's Yellow Fever Commission to West Africa, situated at Yaba, near Lagos, Nigeria.

from the Belgian Congo. Only four cases were reported from Nigeria, one in January, one in May, and two in September. On the Gold



Countries on the west coast of Africa where yellow fever occurred during 1927. The figures within the circles show the number of cases reported in the various areas.

Coast outbreaks occurred in several native towns. Owing to limited personnel and to the abundance of material available on the Gold Coast, no attempt was made by the Commission to carry its activities into other countries, although invitations to do so were received from the French territories where the disease was present.

Numerous difficulties are met with in investigating native outbreaks. The natives run away and hide their sick when the European doctors

come into the town. Great tact and patience are required to gain their confidence sufficiently so that they will permit examinations to be made. Often the presence of the disease is unknown until someone from the infected area dies in a settlement where his case is brought to the attention of the European officials.

In spite of these difficulties the field medical staff of the Commission investigated many cases in the following native towns of the Gold Coast:

PLACE	DURATION OF OUTBREAK
Suhum	December-March
Somanya	April-June
Sra	April-June
Accra	March-May
Larteh	April-June
Kpeve	June-July

In Suhum twenty-seven patients were studied, in Larteh thirty-five. This means that the towns were visited each day and the sick people sought out, examined, and observed through the course of their illness. The Medical Research Institute at Accra lent its mobile laboratory to the Commission for these field studies. From patients seen within the first three days of their illness blood specimens were secured for use in making laboratory studies of the disease. Whenever possible the diagnosis was confirmed by gross and microscopic examination of tissues obtained at autopsy. Mosquito surveys of the



Native compound in Larteh, Gold Coast, where cases of yellow fever occurred in 1927.



Cases of yellow fever also occurred during the year in this Larteh compound of better type.



A concrete-lined spring which furnishes water for the town of Larteh.



Receptacle used in Larteh for storing water.

towns were made, and the history of the epidemic was investigated to determine if possible the source from which the disease came and where and when it gained access to the town.

At the end of the year the scientific staff had increased to twelve men, including the Director, two bacteriologists, a pathologist, an epidemiologist, three medical field men, and two laboratory assistants. A biochemist with an assistant had been appointed. The outlook for the future is promising. More investigation is needed both in the field and in the laboratory, but the knowledge gained in 1927 will undoubtedly advance the time when better control of yellow fever in West Africa may be obtained by the various colonial governments.

Control Activities Continue in Brazil

No cases of yellow fever are known to have occurred in the Americas in 1927 outside of Brazil, and there nine cases were reported (in four the diagnosis was confirmed) all in the state of Bahia in the neighborhood of the capital, São Salvador. The last one was reported in Esplanada in July. These cases were no doubt part of the outbreak of 1926, which was described in last year's report. Efforts were made by the Brazilian health officers throughout 1927 to secure reports of all suspicious cases of illness,

and every report was investigated. Frequent surveys were made of the various centers through which yellow fever might spread if present in the interior, but no cases were found during 1927. The possibility of the entrance of yellow fever into the country from Africa must be recognized in connection with preventive work. During 1927 an extensive outbreak of the disease occurred in Senegal on the west coast of Africa, and the minimum time required for a trip by steamer from Dakar in Senegal to Recife, Pernambuco, is about six days, which is just within the incubation period of the disease. Aeroplane travel will introduce a new element to be watched.

The chief accomplishment of the yellow fever service in Brazil during the year was an improvement in the technic of the antilarva work, to the end that its efficiency might be increased and the expense of operation reduced to a point where the Brazilian health departments could take it over. Except in Bahia antilarva measures were directed against the yellow fever mosquito only and inspections were limited to domestic water-containers in which this mosquito breeds. This made possible a considerable reduction in personnel and equipment.

A follow-up system of inspections has been developed which places the responsibility for the presence of *stegomyia* breeding squarely upon

the people. The yellow fever service has become a group of teachers who make every effort to educate the householder, so that he himself will prevent its occurrence on his property. The method is briefly this: Whenever an inspector finds a water-container with *stegomyia* larvae, he empties it and explains to the householder the danger of allowing yellow fever mosquitoes to breed, pointing out that the health regulations make the householder responsible when a focus of breeding is found on his place. Householders are urged to keep their water-containers covered so that mosquitoes cannot reach the water and to use small water-bottles and jars instead of the more usual large earthenware jars which are not easily kept clean and which are prolific sources of *stegomyia* breeding.

Special effort is directed also toward securing the elimination of water-barrels and of the tanks so extensively used in some areas of Brazil where the water-supply is irregular or insufficient. These have always been a problem because they are difficult to inspect and to control. Where they must be used the householder is directed to cover them. At the close of each day's round of visits the inspectors report the location of houses where larvae have been found. The following day the director and the chief inspector visit these places to see that the householders under-

stand fully the instructions which they have received.

At the beginning of the year routine inspections were being made everywhere each week. Except in places where non-immunes congregate, such as schools, hotels, barracks, and prisons, this cycle was later extended to two weeks; before the end of the year it was in some places lengthened to one month. With expert supervision, a low stegomyia index, and a cooperating public, breeding may be maintained at a safe level even with the lengthened cycle and a greatly reduced corps of inspectors. At the close of the year 80 per cent of the buildings in Recife were without the objectionable water-jars, although only 34 per cent had connections with the public water-mains. A new type of jar has been designed having a small opening at the top and a spigot near the bottom; this will be almost mosquito-proof. These improvements have obviated the need for oil and fish in the control of the yellow fever mosquito, thus effecting a considerable saving in labor and expense.

III

Public Health Education

The rapid expansion of organized full-time public health work in many parts of the world has focused attention on the need for specialized



Types of water-jar recommended by the Brazilian Yellow Fever Commission for storing water in the homes. This group is on permanent exhibition in the office of the Commission in Recife, Pernambuco.



Public hydrant, Recife, where water is sold to householders.



Teaching pavilion of the D. Anna Nery School of Nursing, Rio de Janeiro, Brazil.



New State Institute of Hygiene, Oslo, Norway, built with the aid of the Rockefeller Foundation.

training for the men and women who are to direct its destinies. Such training is highly essential to the efficiency and permanency of this branch of service to human society.

Aid in advancing public health education was extended by the Foundation during 1927 through four distinct channels: (1) training health personnel, (2) assistance to schools and institutes of hygiene and public health, (3) contributions toward the teaching of public health in medical and other schools, (4) travel grants to government health officials.

Field Training for Health Workers on an Enlarged Scale

In 1922 the International Health Board in cooperation with the Alabama State Board of Health established a training station in Covington County, Alabama, where the newly appointed staff members of the Board and members of the state and local health departments could gain experience in rural health work. During the succeeding five years the short period of field training in public health corresponding to the medical internship proved so valuable that several other training stations were established in this country and abroad. Instead of didactic work, these stations offer actual participation in the activities of a county health organization or, in the case of the malaria stations, in research,

surveys, and control measures. In the United States during 1927 the Rockefeller Foundation cooperated with governments in conducting four training stations for county health workers and one for malaria personnel. It also contributed to special stations for research in malaria and training of malaria personnel in Italy, Corsica, and Spain, and to two centers in Poland for training in rural health work.

Interest in the prevention of disease naturally follows in the wake of catastrophe. During the period of emergency relief following the Mississippi flood which occurred in the spring of 1927, the counties supporting full-time health units demonstrated the value of these organizations in protecting the public against disease. Collaborating with the United States Public Health Service and with state, county, and local authorities in the seven states affected by the inundation, the Foundation pledged \$500,000 toward a flood relief budget of \$1,250,000 to be used in aiding the other stricken counties to organize health departments during a period of eighteen months. Between early July and December 31, 1927, eighty-five counties of the one hundred seriously affected established or definitely arranged for county health departments. The Foundation also aided the state of Mississippi in establishing a field training station for health workers

in Sunflower County, Mississippi, with headquarters at Indianola; and here for the first time field training was given to nurses and sanitary inspectors as well as to physicians. During the last six months of the year thirty-nine physicians, sixty-two nurses, and seventy-two sanitary inspectors spent an average period of thirty-one and one-half days in training. As a place of appraisal of personnel tentatively selected for public health positions by the various states, the station performed an important function. The number of failures among appointees was reduced, public funds were conserved, and the popular standing of public health work was protected.

In October, 1927, Alabama established a field training station for her own personnel. The Foundation's representative who was serving as director of the station was withdrawn. The state is being assisted, however, in meeting the living and travel expenses of the persons in training. The station has been transferred to Elmore County and the training program extended to include nurses and sanitary inspectors as well as county health officers.

On February 1, 1927, a field training station was opened in Darke County, Ohio, with headquarters at Greenville. The station, built around the Darke County Health Unit, is supported by the state of Ohio and the Rockefeller Foundation.

The director of the station is a member of the Foundation staff and is also county health officer of Darke County. This station offers facilities for the training of health officers, sanitary inspectors, and public health nurses. During the year, thirty-four physicians and five nurses spent an average of thirty-two days in training. These public health workers came from five states of the United States and ten foreign countries. After completing their training they were employed in seven states of the United States and in the foreign countries which requested their training. This station received visitors from four foreign countries and eleven states of the United States.

The malaria station at Edenton, North Carolina, provided training for three members of the Foundation staff, four other American health workers, and seven Foundation fellows from foreign countries.

The antimalaria station in Italy continued to offer, at the central office in Rome and at the provincial stations, opportunities for students of malaria to observe its organization and methods and secure practical training in mosquito control and malaria prevention. Rockefeller Foundation fellows, both foreign and resident, fellows sent by the League of Nations, students of the recently established International School of Malariology at Rome, and others availed them-

selves of these opportunities. Among the resident fellows were eight doctors employed by the Government of Rome as physicians and health officers in the Roman Campagna, who were given intensive training for one month. In addition, a training station established at Rovigno and supported by local and central governments provided training for the field personnel employed in antilarva campaigns in numerous towns in the province of Pola. Malaria personnel in the cities of Caserta and Grosseto and the town of Rimini were also trained.

The Foundation continued aid to the malaria station established at Corsica in 1925 as a training base for French-speaking malariologists. Early in 1927 a full-time malariologist took up his residence at Porto Vecchio, a town on the east coast, with a view to developing there a field organization similar to that at Porto Torres in Italy. The activities of the station have stimulated greater interest in the possibilities of anti-malaria measures on the part of local authorities, who are beginning to contribute toward the malaria work.

The School of Malariology and Research Laboratory established at Naval Moral de la Mata, Spain, in conjunction with the malaria campaign in the province of Cáceres which is being aided by the Foundation, has developed

satisfactorily. Facilities for practical field work offered at this training station were enjoyed by approximately a score of students who included League of Nations malaria fellows, provincial and municipal health officers, and private physicians. The Foundation granted four resident fellowships.

Schools and Institutes of Hygiene

Eight institutes and schools of hygiene received financial aid during 1927, namely, the School of Hygiene of the University of Toronto, Canada; the Institute of Hygiene, São Paulo, Brazil; the London School of Hygiene and Tropical Medicine; the State Institute of Public Health, Prague, Czechoslovakia; the State Hygienic Institute, Budapest, Hungary; the School of Hygiene, Warsaw, Poland; the School of Public Health, Zagreb, Yugoslavia; and the State Institute of Hygiene, Oslo, Norway. The schools at Toronto, Budapest, and Zagreb held their formal opening ceremonies during the year.

On June 9 Sir George Newman, chief medical officer of the Ministry of Health of Great Britain, opened the new building of the School of Hygiene of the University of Toronto, which was erected and equipped with the aid of the Foundation. In this institution there have been brought together all the departments of the university

responsible for instruction in hygiene, preventive medicine, and public health. The building also houses the Connaught Laboratories for research and public service in the preparation and distribution of biological products. The registration of the school for the academic year 1927-1928 comprised fifty-five graduate and 230 undergraduate students, as compared with thirty-eight graduate and 202 undergraduate students in the preceding academic year. During 1927 the Foundation fulfilled its pledge toward the endowment of the school by payment of the sum of \$250,000.

A contract was awarded for the construction of an Institute of Hygiene at São Paulo, Brazil, toward the building and equipment of which the Foundation has voted funds. Building operations have been delayed, but the outlook is promising for the initiation of work early in the coming year.

The building program of the London School of Hygiene and Tropical Medicine will probably be completed in the spring of 1929. During 1927 the Foundation finished payment upon a total pledge of \$2,330,000 toward land, building, and equipment. It also provided the salary of the director and met certain other operating costs. The work of the school has continued to expand. For the academic year ending in July, 1927, the

division of tropical medicine had an enrolment of 155 students, with 99 additional students participating in the work of special classes.

The program of work in the State Institute of Public Health at Prague during 1927 included the manufacture and distribution of biological products, the development of a public health diagnostic laboratory service, and scientific research. The extensive and rapidly increasing distribution throughout Czechoslovakia of the various sera and vaccines prepared at the institute indicates a wider use and a growing appreciation on the part of the medical profession of both the curative and preventive values of biological products. As to the building program of the institute, which the Foundation is aiding, a total of twenty-one new buildings had been completed and equipped up to the end of 1927. The serum farm of the institute, located in the suburbs of Prague, is a model of its kind.

The State Hygienic Institute at Budapest, toward which the Foundation contributed funds for building and equipment, was officially opened on September 29, 1927. As a feature of the inauguration, a conference was held including representatives of various schools and institutes of hygiene in Europe and South America and of the League of Nations, by whom the conference was arranged.

The Director of the institute and other staff members have received specialized training under fellowships awarded by the Foundation. The functions of the institute include training of health personnel, development of a public health laboratory service, and the solution of local health problems. A member of the field staff of the Foundation continued to serve as adviser to the Government in the development of the institute.

The School of Hygiene at Warsaw, Poland, offers a most interesting illustration of state effort to improve health conditions by providing an extensive program of courses for the benefit of those closely concerned with public health problems. Physicians, district health officers, sanitary and factory inspectors, nurses, midwives, teachers, and social workers have received the benefit of courses ranging from three-day intensive training in the prevention of diphtheria and scarlet fever to the full year's course required of candidates for positions as medical officers of health in the state service. Enrolment has grown steadily, increasing from seventy-six students in 1924 when the school began to function, to 802 in 1927, with a total of 1,588 students within four years. In 1927 the first full year's course for medical officers of health was completed by twenty-six physicians, of whom eight-

een were on leave from the Polish health service, one from the factory inspection division of the Ministry of Labor, four from city health departments, and one from the Army Medical Corps. The school offered but three courses during its first year, while in 1927 the program was increased to eleven. A field representative of the Foundation continued his services as adviser to the Government in matters concerning the school. During the year the Foundation concluded its agreement to provide funds for the salary and travel of a biochemist appointed in 1923 to organize a division of biochemistry in the school.

In 1927 the Foundation fulfilled its pledge to contribute approximately \$189,000 toward the building and equipment of the School of Public Health at Zagreb, Yugoslavia. The Government will assume all maintenance costs. The school was practically completed during the year, and the formal opening took place October 3. The conference held under the auspices of the League of Nations at the State Hygienic Institute, Budapest, late in September, continued its sessions at Zagreb during the inaugural ceremonies of the new school.

Although the scheduled courses for medical officers of health were postponed until the coming year, there was given in the fall of 1927 a six weeks' course in public health for fifty school

teachers, men and women, which included general hygiene and stressed the prevention of communicable diseases and the importance of school hygiene; the women students also studied home economics at the nurses' training school in Zagreb. Extension courses for both men and women have already been initiated in villages where intensive rural health work is in operation; instruction emphasizing general sanitation and child hygiene covers a period of one month. To expedite the work courses are given in six villages at the same time.

Important legislation was enacted in the fall of 1927 whereby practical training in public health work over a six months' period will be required of all medical students in Yugoslavia; the program will include field work in hygiene, epidemiology, malaria, trachoma, tuberculosis, venereal diseases, and maternal and infant hygiene.

In 1927 the Foundation made the final payment upon its pledge toward the construction of the new building to be occupied by the State Institute of Hygiene in Oslo, Norway.

Teaching Hygiene in Other Schools

Aid was continued toward the program that is being developed to promote the teaching of preventive medicine in the Harvard Medical School. In accordance with a five-year agreement be-

coming effective in 1925, a grant was again made to the Imperial College of Tropical Agriculture in Trinidad, British West Indies, for the maintenance of a chair of sanitation and tropical hygiene. The representative of the International Health Division in China continued to serve as professor and head of the department of hygiene and public health of the Peking Union Medical College.

Travel Aid to Public Health Officials

Preventive medicine and public health procedure are going through a period of rapid transition as a result of fruitful research and greater experience in methods of administration. In order to promote an exchange of ideas among health workers in various parts of the world, travel aid was extended to thirteen health officials from nine foreign countries to enable them to visit the United States. The countries represented in this group were Australia, England, France, India, Japan, Mexico, Rumania, Spain, and the Netherlands East Indies. Opportunity was also afforded to thirteen health officials representing eight countries of Europe, namely, Turkey, Austria, Bulgaria, Hungary, Czechoslovakia, France, Spain, and Italy, to visit other European countries.

Thirty-three health workers from fifteen states of the United States and four Canadian provinces

were enabled to visit some of the outstanding health organizations in the United States. These persons included American state health officers and division chiefs, and Canadian health officials and public health nurses. Two public health nurses appointed for service in the Straits Settlements were given similar opportunities.

Fellowships

In its effort to aid governmental agencies in the development of adequately trained personnel, the Foundation in 1917 inaugurated a fellowship program. The fellowships have been granted largely to governmental agencies for candidates of their selection, with the understanding that these persons would be trained for certain important posts in the health service of the country from which they were assigned. The fellows, in turn, agree to return to their countries and accept the positions which have been reserved for them. Since the beginning of this program 477 fellowships in public health have been awarded: ninety-two to the governments of Mexico, Central and South America, and the West Indies; 232 to European nations; fifty-two to the East; and 101 to various states in the United States and provinces in Canada. The distribution of these fellows in the various specialties has been as follows: public health administration 179,

public health laboratory service 103, public health nursing thirty-six, malaria twenty-nine, sanitary engineering twenty-seven, epidemiology twenty-three, vital statistics twenty-two, child hygiene and infant welfare nineteen, tuberculosis ten, food control nine, industrial hygiene eight, venereal disease control four, communicable disease control two, school hygiene two, mental hygiene two, oral hygiene one, maternity welfare one.

During 1927 there were 163 fellowships in operation: thirty-five awarded to the governments of Mexico, Central and South America, and the West Indies; ninety-three to European nations; eighteen to the East; seventeen to various states in the United States and provinces in Canada. The distribution of fellows according to subjects was as follows: public health administration fifty-one, public health laboratory service thirty-seven, public health nursing seventeen, malaria fourteen, sanitary engineering ten, child hygiene and infant welfare eight, vital statistics seven, epidemiology six, tuberculosis four, school hygiene two, industrial hygiene two, communicable disease control two, venereal disease control two, maternity welfare one.

In 1924 a supplementary program of resident fellowships was inaugurated to provide opportunity for students to study in their own countries. Since the initiation of this program 145 awards

have been made, as follows: to Yugoslavia sixty-seven, to Hungary thirty-five, to Italy twenty-four, to Poland nineteen. During 1927 seventy-nine resident fellowships were active, as follows: Yugoslavia twenty-two, Hungary twenty-four, Poland nineteen, Italy fourteen.

Advancing the Training of Health Workers

With a view to providing adequately trained sanitary inspectors to meet the needs of parochial boards in the development of enlarged public health programs, the Jamaican Government with the aid of the Foundation's representative in the colony, organized a school for sanitary inspectors at Kingston. The Foundation provided funds for the purchase of laboratory equipment. This school, directed by the senior sanitary medical officer of the colony, is a branch of the Royal Sanitary Institute of London and will offer similar courses of training. The teaching staff is composed of members of the government medical and sanitary service. The first session, opening September 19, 1927, was attended by eighteen students representing twelve of the fourteen parishes; among them were government sanitary inspectors sent by seven parochial boards for further training.

The curriculum consists of lectures, laboratory work, and practical field training including rural

sanitation with special emphasis on types of latrines, the examination of foods, inspection of water-supplies, and sewage disposal. Health education will form an important feature of the training, so that sanitary inspectors may be equipped to promote health conservation by becoming educational rather than punitive agents. Enrolment will be limited to twenty students, with preference to those already in the island health service.

The Foundation is collaborating with the Western Pacific High Commission of the British Government in a program to increase training facilities for native medical assistants in the South Pacific. This will make possible the development of an adequate health service throughout island groups administered by the commission, which include a population of more than four hundred and fifty thousand natives.

During 1927 a contribution of approximately \$10,000 was made toward the building program of the School for Native Medical Assistants in Suva, Fiji. Aid on a declining scale was also pledged over a number of years to meet increased maintenance costs of the school and to develop a reorganized and enlarged island health administration. A new dormitory for the school was finished before the close of the year and additional buildings are nearing completion. The

Foundation's representative in the South Pacific is aiding in the development of this program.

New Epoch in Public Health Nursing in Brazil

Aid was continued to the national Department of Health of Brazil in the development of a nursing service, which includes a division of nursing education and a division of public health nursing. The completion of the teaching pavilion of the D. Anna Nery School of Nursing on the grounds of the Hospital Geral de Assistencia at Rio de Janeiro and the installation of equipment marked the termination of the Foundation's agreement with the Government of Brazil to assist in developing a school of nursing. The new classroom pavilion was officially opened on September 28, 1927.

By assuming the nursing care of additional services in the Hospital Geral de Assistencia and the São Sebastião Government Hospital for Communicable Diseases, the school of nursing now enjoys facilities for teaching both theory and practise in all required subjects except hospital care of infants. The nursing care at the pavilion Affonso Penna of the São Sebastião Hospital, which was opened in January, 1927, has been highly commended by both officials and physicians as marking the beginning of a new epoch in the care and treatment of communicable diseases in Brazil.

During the year twenty students of the class of 1927, the third class to be graduated, completed the course of study; fourteen of these graduate nurses were assigned to posts in the division of public health nursing and four to the D. Anna Nery School of Nursing; one returned to São Paulo as director of nurses in the isolation hospital there. Two new groups of students numbering forty-nine in all were matriculated; approximately 27 per cent were normal school graduates, and 57 per cent were admitted by examination. At the end of the year there were sixty-seven students still in training at the school; these represented eight Brazilian states and the Federal District. Three students were sent by state governments or departments of health and, upon completion of the required period of study, are expected to undertake nursing work in the states from which they come.

Students who demonstrate exceptional qualities of leadership are given opportunities for postgraduate study in the United States through Foundation fellowships and, as they return to Brazil, replace the American graduate nurses on duty in the service of nursing of the national Department of Health. Since 1925 eleven fellows in nursing have been sent to the United States, and by the end of 1927 eight of these nurses had completed their postgraduate work

and returned to Brazil. On December 31, 1927, the supervisory staff of the D. Anna Nery School of Nursing included seven Brazilian trained nurses and five American nurses, one of whom serves as directress of the school.

The division of public health nursing continued to direct the nursing activities carried on in the Federal District by the bureaus of child hygiene, tuberculosis, venereal disease, and communicable diseases. Noticeable improvement in both scope and quality of nursing service is manifested in the various zones to which Brazilian graduate nurses are assigned.

The nursing staff of the bureau of communicable diseases has been particularly successful in obtaining the support of private physicians in connection with more effective control of communicable diseases. Eight of the eleven child health stations operating under the bureau of child hygiene have had the services of public health nurses during clinic hours. At the close of the year more than three thousand children were under the care of the division of public health nursing. Two dispensaries of the bureau of tuberculosis have the benefit of a new type of health service at the hands of public health nurses known as "educators," who carefully instruct individual patients at the clinics, thereby securing greater cooperation in carrying out

prophylactic measures. This service will be rapidly extended.

At the close of the year the technical staff of the division of public health nursing included four American nurses, one serving as directress and two as supervisors, seven Brazilian supervisors, and forty-one Brazilian public health nurses, of whom thirty-four were in the general service and seven in the service of venereal diseases. At the request of the director of the service of contagious diseases in the nearby city of Nictheroy, the service of nursing assisted in reorganizing the work carried on by health visitors in that district.

Aid Continued to Central Bureau of Nurses in France

Under a five-year cooperative agreement effective from July, 1925, the Foundation continued to assist the development of the Central Bureau of Nurses in France, a division of the National Office of Social Hygiene. The development of this important bureau has been described in previous annual reports.

IV

Malaria

Malaria campaigns, surveys, and research occupied an important place in the year's program. Projects undertaken by sixteen foreign governments were either aided financially or

assisted in an advisory way by Foundation representatives. In the United States assistance was given to the malaria programs of the central organizations of seven states, and to those of twenty-six counties in these and other states.

Field Studies and Research

At the field training station in Edenton, North Carolina, which offers facilities for special training in malariology, investigations were made concerning the habits and distribution of *A. quadrimaculatus*, the malaria vector of the Southeastern United States. These studies were directed particularly toward elucidation of the following points: winter activities of the anophelines; malaria incidence and splenic enlargements in the study area; anopheline breeding-places as influenced by dissolved oxygen and carbon dioxide, temperature, and hydrogen ion concentration of the water; ovarian development in the mosquito as related to the stage of digestion of the blood meal. It was found that although true hibernation does not take place in that region, growth of the larvae is retarded during the winter months and their activities are sluggish. The *A. quadrimaculatus* was found to have a preference for water of neutral or alkaline reaction with a mean temperature of 24° F. or higher. In connection with the field studies a

reconnaissance was made in two neighboring counties in North Carolina and assistance was given in a malaria survey of an impounded area near Columbia, South Carolina.

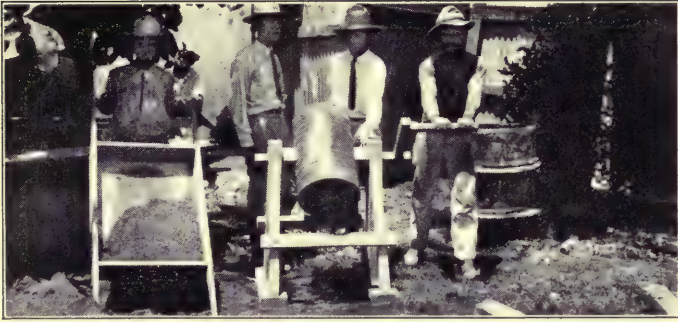
Under the direction of Professor R. W. Hegner, of the School of Hygiene and Public Health of the Johns Hopkins University, and Professor W. H. Taliaferro, of the University of Chicago, research on the treatment and immunology of malaria was continued with financial aid from the Foundation.

To Test Malaria Control Costs in Mississippi

In order to test the possibility of antimalaria campaigns on a county-wide basis and within the limits of an average county health budget the Foundation accepted an invitation to participate in the work of the Health Department of Humphreys County, Mississippi. A staff member with special training in malariology, who is serving as health officer of the county, will endeavor to carry out malaria work as a part of the general health program of the county. The region has a high malaria rate with the disease distributed in a fairly uniform manner throughout.

Central America Shows Progress in Malaria Work

No financial assistance has been given by the Foundation toward the malaria work that is be-



Nicaraguan antimalaria squad sifting road dust preparatory to mixing it with Paris green for dusting.



Dusting a stream edge with Paris green, Philippine Islands.



Applying Paris green in Honduras



A breeding-place of the anopheles mosquito, Concepción, Argentina.



The same area drained and now under cultivation.

ing carried on by various governments in Central America, but the services of Foundation representatives in these countries are available as advisers and consultants in the development of malaria programs.

The government antimalaria campaign in Nicaragua, which is largely supported by local funds, was considerably extended during the year. Anopheline breeding in large towns was reduced chiefly by drainage measures. In smaller towns breeding-places were visited weekly by a sanitary inspector who employed Paris green as a larvicide. To evaluate the campaign instituted in Rivas as the result of field studies undertaken some years ago, a comparative study was made of the controlled area in Rivas and the town of Nandaime, where conditions favoring anopheline production are similar to those formerly existing in Rivas. The results of careful spleen and blood examinations made in each town indicate that malaria has been materially reduced in Rivas as the result of the drainage measures which have been maintained there for several years.

In the Republic of Panama malaria is an outstanding health problem. Under the direction of the recently created division of sanitary engineering of the national Department of Health, with which a Foundation sanitary engineer is

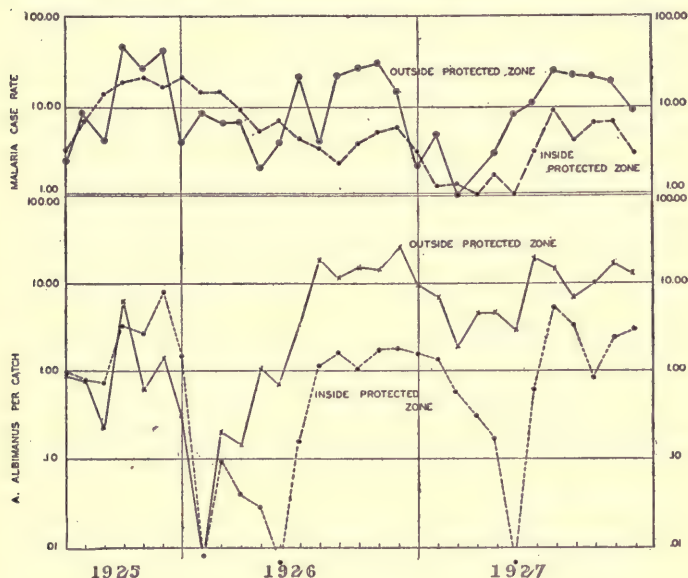
associated in an advisory capacity, antimalaria operations were begun in the city of Aguadulce and the vicinity in conjunction with the extensive drainage project now under way in that area. The outlook for permanent malaria reduction supported by the municipality is most promising. A survey of anopheles breeding was made at Puerto Armelles, and measures were recommended to prevent the spread of malaria in a railway construction camp.

The Foundation representative in Nicaragua visited Honduras during the year and assisted the Government to organize an active campaign against malaria, which was initiated on the north coast. The program consisted largely of the use of Paris green which was applied to anopheles breeding-places by the sanitary police. The municipality of San Pedro voted funds for simple drainage operations. The Foundation representative in Guatemala visited Salvador and assisted the Government in planning anti-malaria work to be initiated in the capital city of San Salvador early in 1928.

Antimalaria Work a Major Activity in Porto Rico

In Porto Rico, in addition to lending a malariologist to serve in an advisory capacity and to supervise government malaria activities, the Foundation provided a drainage engineer to

undertake demonstrations in subsoil drainage. It also contributed a contingent fund of \$500 for special field studies and investigations under the



Monthly prevalence of malaria and of *A. albimanus* mosquitoes in a section of Fajardo, Porto Rico, where antimosquito measures are being conducted, and in an adjoining area where no mosquito control work has been done.

direction of the malariologist. The Government voted \$35,000 for antimalaria work in operation on the east and south coasts and also additional funds for other items of the malaria program.

The malaria campaign was continued at Fajardo on the east coast and extended to include Salinas on the south coast and Luquillo near Fajardo. Malaria surveys were also made at Yauco, Guayama, Santa Isabel, and Ceiba. Studies

of the feasibility of subsoil drainage were undertaken at Fajardo and Salinas. Field investigations included a thorough study of the Isabela Reservoir area, a new government irrigation project; observations in the Humacao area where major drainage is practised; studies at Fajardo and Humacao on the relative value of spleen and parasite rates in determining the amount of malaria, and on preferential feeding habits of *A. albimanus* and *A. grabhamii*. Investigations were also undertaken as to the durability of various types of screening material, the value of automatic tide-gates, infectivity rates in species of anopheles found in Porto Rico, and the importance of long flights of anopheles in malaria transmission.

The second year of the campaign at Fajardo was completed in July, 1927. Progress has been very satisfactory with relatively more emphasis on antilarva work and less on prolonged administration of quinine, although a large percentage of the population continued quininization on their own responsibility.

In spite of unusually heavy rainfall throughout the year, anopheles breeding was satisfactorily controlled by minor drainage measures, including the installation of improved irrigation gates, and by the use of Paris green which has proved a highly effective weapon. Since Paris green is

sprayed with the Italian knapsack blower mostly in ditches and small creeks, it has been possible to estimate the cost of dusting in Porto Rico as \$.54 per kilometer of ditch.

The malaria incidence in Fajardo has been steadily reduced and no longer plays a major rôle in producing disability in the community; 286 cases were reported in the controlled zone in 1927, a reduction of 423 cases over the previous year. In the surrounding non-controlled area mosquito catches continued high, and 131 cases of malaria were reported among a population approximately one-eighth that of the zone of control.

In January, 1927, a resurvey was made at Fajardo, within and without the controlled zone, to determine the spleen and parasite rates. Findings showed that within the zone, the spleen rate had been reduced to 5 per cent as compared with 15 per cent in July, 1924, and the parasite rate to 2.5 per cent as against 31.6 per cent in July, 1924. In the non-controlled region the spleen rate decreased to 13.2 per cent and the parasite rate to 6 per cent. None of the children within the controlled zone who had palpable spleens showed parasites in the blood, while in the non-controlled area 23 per cent of those with palpable spleens were found to harbor parasites.

At Luquillo results thus far secured with Paris green are very encouraging and indicate that

where irrigation is not employed antilarva work can be satisfactorily accomplished at a much lower cost. The campaign there was supported partly by the Fajardo Sugar Company which is cultivating a large part of the lands in the area.

Subsequent to an epidemic of malaria in Salinas in 1926 antimalaria measures were undertaken in this area, which includes about 4,000 persons. Financial aid was provided by the municipality of Salinas and by two large sugar companies. Cane-field irrigation is practised throughout the year, and irrigation reservoirs and sump pits present difficulties not encountered at Fajardo. The plan of campaign is similar to that followed at Fajardo, i.e., treatment and antilarva measures. An improved type of irrigation gate was installed for demonstration purposes and paid for by property owners. Where drainage is not feasible, Paris green is used weekly. Santa Isabel, adjacent to Salinas, is being observed not only to evaluate the work at Salinas but also in expectation of extending the campaign to that area. During the period from May 1 to December 31, 1927, 757 cases of malaria were reported at Salinas.

In January, 1927, a study was completed of the region used for impounding water for the Isabela Irrigation Service to determine malaria incidence there and to advise necessary meas-

ures. Findings indicated a small amount of malaria among the population of fifteen hundred living within one kilometer of the margin of the reservoir. Recommendations were made to the Commissioner of Health of Porto Rico to prevent the development of an epidemic. The Department of the Interior, which has charge of all irrigation works in the island, assumed responsibility for carrying out preventive work. The value of these measures finds a significant illustration in this case: no breeding took place in the reservoir, and a survey at the end of the year showed only an occasional malaria carrier.

Before the close of the year the central offices of the malaria campaign were moved from Fajardo to San Juan where they became an integral part of the Insular Department of Health under the name of the bureau of malaria control, thus permitting more efficient direction of malaria activities as they are extended to other sections of the island. The organization and success of this bureau is largely due to the interest and efforts of the Commissioner of Health of the island, who has rendered invaluable assistance in the promotion of antimalaria work. Property owners, sugar companies, and other agricultural interests have assured their cooperation in taking up the work. The Fajardo Sugar Company recently voted funds toward a demonstration in

mosquito reduction on some of their lands under the supervision of the drainage engineer.

Besides the malariologist and the engineer provided by the Foundation the malaria campaign staff consists of two medical officers, a technician, a stenographer, two caretakers, and fifteen sanitary inspectors. The Fajardo demonstration area serves as a training base for malaria inspectors. Eight men received training during 1927.

Preparing for Antimalaria Work in Venezuela

According to a program of collaboration with the Government of Venezuela in developing public health work in that country, the Foundation during 1927 provided the services of a member of its field staff to determine the incidence of malaria and hookworm disease and subsequently to organize antimalaria measures. Early in the year an intensive malaria survey was initiated in the Maracay district of the Lake Valencia region, which is located about fifty miles from Caracas, the capital of the republic; but it was not possible to complete the work during the year.

In conjunction with the malaria work, the services of an entomologist and a sanitary engineer were also made available by the Foundation for a period of several months. The entomologist conducted a field study of the anophelines of Venezuela to establish the identification of the

probable malaria vectors. Findings disclosed several species hitherto undescribed from Venezuela and brought out the fact that the Lake Valencia region possesses the greatest number of species of anopheles thus far recorded for a single locality in the American tropics. The engineer prepared a detailed map of Maracay and the vicinity and studied the feasibility of draining two large lagoons located at some distance from Maracay.

Drainage Featured as an Antimalaria Measure in Brazil

The program for malaria reduction undertaken by the Government of the state of Rio de Janeiro, Brazil, was aided by the Foundation in accordance with an agreement entered into in 1925. Work was undertaken in seven districts, in the majority of which permanent drainage was the most promising single measure. In Capivary drainage was practically completed, and during the third quarter of the year there was a reduction of 50 per cent in the incidence of malaria as compared with the corresponding quarter of 1926. In Itaperuna, where work was started in 1925, no malaria was reported in 1927.

Progress of Antimalaria Work in Argentina

The second year of antimalaria work in Argentina showed promising results. Operations were carried on in the provinces of Tucumán, Jujuy,

and Salta. In the latter province a preliminary survey was made covering three towns.

In Ledesma, province of Jujuy, where a campaign was initiated early in 1927, it was found that antimosquito measures within a zone extending one and one-half kilometers beyond the borders of the town were not effective in protecting the population from *A. pseudopunctipennis*, the principal malaria vector in Northern Argentina. Flight experiments showed that this mosquito was coming in from a distance of four kilometers. Active campaigns were continued in two zones in the province of Tucumán, one including Concepción and La Corona, and the other Medinas, La Trinidad, and El Porvenir. In addition to drainage—which consisted of ditching and subsoil drainage by means of tile—Paris green, oiling, and top minnows were employed in the abatement of mosquito breeding.

Entomological studies served further to define the distribution of *A. pseudopunctipennis*. Studies were reported concerning the blood-feeding habits of this species and the breeding activities during the dry season. It has been pointed out that breeding goes on during the entire year and that the adults do not hibernate.

Progress in Italy

The Foundation has completed its third year of collaboration with the Government of Italy

in malaria field studies and demonstrations. Work has continued along the general lines described in the report of the International Health Board for 1926.

The Government has assumed an increasing responsibility in the administration of the work, the Foundation representative serving in an advisory capacity.

The scope of activities of the anti-malaria station was greatly enlarged by the open-



Areas of Italy where malaria studies were carried on during 1927.

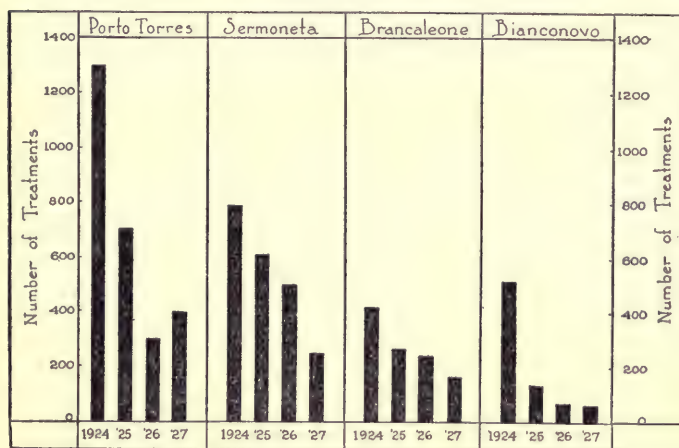
ing of a sixth regional station at Monfalcone in the province of Trieste and the establishment of village units in three additional communities. Field studies were extended to four new zones. Thus in addition to the work of the central office at Rome, there were twenty-one anti-malaria field projects under way in various regions of Italy during the year, namely, in Sardinia, Sicily, Catania, the Pontine Marshes, the Roman Campagna, and the marshes and delta of the Po River. These projects comprised six

regional field laboratories, eight village stations for practical experimentation, and seven areas for special field investigations. The station also stimulated antimalaria measures in the provinces of Catanzaro, Trieste, Grosseto, Caserta, Forli, and Pola, and assisted local health officials in organizing antilarva campaigns and training personnel.

Various types of preventive measures continued to be employed with a view to developing methods which will be not only effective but economically feasible. Larva reduction by means of Paris green and top minnows, alone or combined, has been carried out in some places. Quininization in conjunction with antilarva work has been employed at six of the fourteen stations. It was used as the sole method at Torpé in Sardinia, but as yet the results seem hardly commensurate with the expense. At Sermoneta near Rome, where Paris green and minnows were used and quinine administered, no mosquitoes were found at any of the catching stations during the malaria season and but one case of malaria was reported among children under one year of age. This medieval town overlooking the Pontine Marshes has been intensely malarious for centuries.

Gratifying results were accomplished by the station at Valchetta on the outskirts of Rome; the

health officer for the district reported the lowest number of malaria cases for many years. The local physician at Fiumicino in the Roman Cam-



Number of malaria treatments, by years, administered in the local dispensaries of four communities of Italy during the period following the initiation of antimosquito measures. While the figures furnished by the dispensaries do not give an accurate picture of the malaria incidence, they at least show its trend over a period of years.

pagna reported that not a single case of malaria had occurred in the transient summer population of about six thousand although the disease had been very prevalent in adjoining towns. In Monfalcone experiments were greatly facilitated by the cooperation of local officials and an aeroplane company, which furnished a plane and pilot for the distribution of Paris green provided by the local government.

The communities undertaking control in Southern Italy have been very successful in their

efforts. Brancaleone, where a single field worker, with the aid of Paris green alone, brought about the eradication of malaria from the town, represents an outstanding achievement. In the town of Porto Torres, Sardinia, there were practically no mosquitoes at the catching stations, and breeding was reduced to a minimum within a surrounding zone of three kilometers. An impounded lake situated three kilometers distant from the villages of Oschiri and Terranova bred no mosquitoes during the season in contrast to millions bred during the same period last year.

The research carried on by the station represents one of its most important functions, constituting a demonstration of the value of coordinated study in different regions under a single direction. Several new problems of importance to field work were included in the studies conducted during 1927 at the central office in Rome and at various field stations. Among the more significant investigations were: a study of *A. elutus*; a series of field studies in regions where, in spite of the presence of anopheles, there is no malaria; investigations to evaluate the effect on frequency and period of relapse of long and short periods of treatment; studies of the comparative larvicidal efficiency of top minnows alone and with Paris green; experiments with x-ray therapy in chronic malaria; and investigations of the



At Sermoneta, a town overlooking the Pontine Marshes, water from several springs is collected in this concrete basin to afford laundry facilities for the population. Before the institution of antimosquito measures in the town anopheles mosquitoes bred in great numbers in this basin.



Cement-lined drainage canal, Roman Campagna.



Subsoil drain installed in Concepción, Argentina, 1927.



Anopheles mosquitoes seek shelter and rest in tree-holes of this type.



Stream in Palestine which is being cleared of vegetation as an anti-mosquito measure.

epidemiology of malaria in regions affected by major drainage.

Progress of Malaria Program in Spain

In Spain the Foundation continued to aid the Malaria Commission of the national Department of Health in a program of intensive malaria work in the province of Cáceres. At Naval-moral de la Mata, a malaria field station and center for research and training has been developed under the name of the School of Malariology and Research Laboratory. Work there is making decided progress under the direction of a former Foundation fellow. The use of Paris green as a larvicide in various areas has proved highly successful. The scope of activity of the mobile laboratory and campaign unit has been enlarged, while the number of dispensaries in the area covered by this unit has been reduced. A statistical study of malaria in the province has been undertaken by a former Foundation fellow to evaluate the campaign measures that have been in operation for several years. Field studies and experiments have been conducted by the station with a view to improving methods of treatment and mosquito control.

Aid to Government Malaria Work in Bulgaria

In Bulgaria funds were contributed by the Foundation for the purchase of laboratory and

library equipment and transportation facilities for the recently completed Institute of Hygiene at Bourgas. Bourgas is the center for antimalaria work throughout the country, and the Institute of Hygiene is a fundamental feature of the program which the Government is putting into effect.

Malaria Reconnaissance in Albania

Following a brief survey of the malaria problem in Albania undertaken in 1926 at government request, a member of the Foundation staff made a reconnaissance of antimosquito work in the city of Durazzo. Subsequently, practical training in antimalaria measures was given at the malaria station in Italy to an Albanian who is now employed by the Government in malaria work in Durazzo.

Malaria Field Studies in the Netherlands

A study of malaria campaign methods was started in 1926 in Medemblik, a small town in the province of North Holland. The comparative merits of Paris green and liquid paraffin as larvicides were investigated in an area of high anopheline density. Results of the study indicate that larva reduction cannot be carried out to advantage with either of the two larvicides to the exclusion of the other. Where liquid paraffin

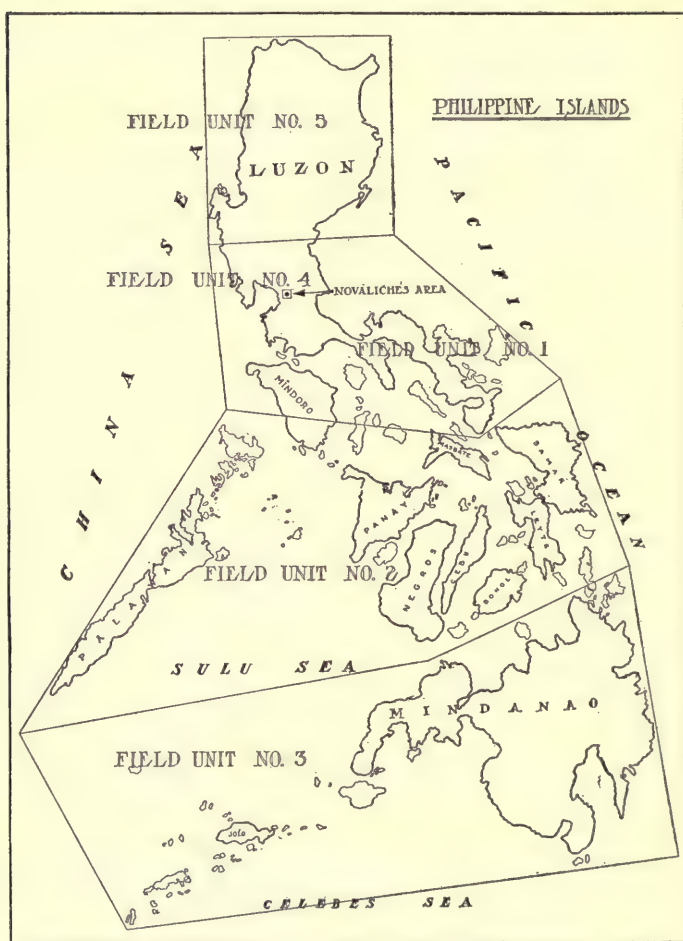
is best suited, it can be applied at a lower cost than Paris green.

Antimalaria Measures in Palestine

The Foundation continued to assist the Department of Health of Palestine in its malaria activities by providing the services of a sanitary engineer who functions as director of the malaria survey section of the department. During the year the section made field surveys of permanent and temporary watered areas, advised and assisted local health authorities in control projects, and collected and studied the anopheles of Palestine. Field surveys were made, maps prepared, and drainage schemes developed for the Rubin area near Jaffa and for Wade Musrara, Birket Ramadan, Zerka, Megiddo, and the Jisr Mejamra area. An engineer is being trained under a fellowship of the Foundation for future work in Palestine.

Government Assumes Responsibility for Malaria Campaigns in the Philippine Islands

In the Philippine Islands during 1927 the Insular Government bore the full cost of its antimalaria program, providing for this purpose the sum of \$50,000. Work was conducted by the malaria control section of the Health Service, which was organized in November, 1926.



Fields of operation of five government antimalaria units in the Philippine Islands, 1927.

The Foundation's aid was limited to field studies and investigations, but its representatives served as advisers to the malaria control section.

To secure more complete statistics on malaria incidence throughout the islands and extend campaigns to new areas, the malaria control section organized five field units for work in the following places: (1) Laguna province, island of Luzón; (2) the island of Mindoro; (3) Zamboanga province, island of Mindanao; (4) the Novaliches area near Manila, Luzón; and (5) the Cagayán valley, Luzón. Antilarva measures were also initiated in other areas.

Municipalities desiring the aid of the Philippine Health Service in antimalaria work must furnish the necessary labor; the Government provides supervision, material, and equipment. Private corporations collaborating with the Government must assume the actual cost of operations; the Health Service provides supervision only. A preliminary survey of the area in which work is to be conducted is made before active operations are started. Surveys in fourteen provinces have been accomplished by the field units. Measures are restricted largely to species reduction since field investigations have proved *A. minimus* to be the principal, if not the only, malaria vector in the Philippine Islands.

The personnel of each campaign unit consists of a medical director, one field director, one technician, and from six to eight labor supervisors.

Newly appointed field personnel receive intensive instruction in antimalaria procedures at training stations situated in Laguna province and in the Novaliches area.

Since field studies and demonstrations during the past few years have proved that antimalaria campaigns are economically feasible for employers of large labor forces, private corporations have undertaken permanent antimalaria work on the numerous sugar haciendas.

The field studies and investigations in the Philippine Islands for which the Foundation provided funds during 1927 include (1) weekly house-to-house canvass for malaria cases in areas in Pampanga province where the campaign has been operating for several years; (2) the study and identification of anopheles larvae and adults; (3) observations of anopheles breeding habits with special reference to preferential breeding; (4) studies to determine the relation between malaria incidence and anopheles breeding in fish-ponds; (5) experiments in connection with subsoil drainage to evaluate this measure in the reduction of mosquito breeding. A simplified key for the identification of the common anophele line larvae found in the islands was completed.

Foundation representatives gave lectures on various aspects of antimalaria work at the School of Sanitation and Public Health recently estab-

lished in Manila. At the medical officers' and teachers' convention held at Baguio, the sanitary engineer conducted lectures and demonstrations relating to malaria work in the Philippines.

Malaria Campaign in Ceylon

Malaria is a serious public health problem in many parts of Ceylon. An engineer has been lent to the Government by the Foundation to organize a division of sanitary engineering, which should play an important part in anti-malaria operations. One of the men recently trained under a Foundation fellowship has returned to Ceylon to continue his work in malaria. As a result of several years' study of the anophelines of Ceylon, a new vector has been discovered, *A. culicifacies*.

V

Hookworm Research and Field Work

Laboratory and field investigations during the past year have led to improved methods of treating hookworm infection and have served further to define the problem in several regions of the hookworm zone.

Prevention of Carbon Tetrachloride Poisoning

For several years Dr. P. D. Lamson and his associates, with assistance from the Foundation,

have been studying the way that carbon tetrachloride acts in the body and trying to devise methods of overcoming its toxic effects. This very efficient vermicide, much used for the removal of hookworms from the intestinal tract, in rare instances causes severe poisoning. The fact that certain persons show signs of poisoning after taking the drug while most people are apparently unharmed by it has been hard to explain; but during the past year much light has been thrown on the problem.

In experiments with dogs, Dr. Lamson and his associates found that the animals could take large quantities of carbon tetrachloride without damage when on a suitable diet, but that if their food was deficient in calcium moderate doses of the drug might bring on severe symptoms which could be relieved by the administration of calcium. On the basis of this work, it has been suggested that carbon tetrachloride should not be used in the presence of calcium deficiency and that calcium be administered to persons showing symptoms of poisoning.

The laboratory experiments and the records of experience with carbon tetrachloride in the field show that the ingestion of alcohol near the time of taking the drug greatly increases the chances of poisoning. It seems probable also that a heavy infestation with ascaris may be a

factor in some of the accidents following the administration of carbon tetrachloride. The presence of undigested food in the intestinal tract is another factor which seems to add to the risk. With this increased knowledge it should be possible to guard against the rare carbon tetrachloride poisonings likely to occur.

The Host-Parasite Relationship

The laboratory studies of the host-parasite relationship in hookworm infections, begun in 1925, were continued during 1927 at the School of Hygiene and Public Health of the Johns Hopkins University by Dr. W. W. Cort and his associates. Quantitative studies were made of the course of infection in the dog by the common dog hookworm (*Ancylostoma caninum*), and efforts were made to discover to what extent and under what conditions resistance against the parasite developed in the host. It was found that the egg count could be used satisfactorily in studying the course of infection with *A. caninum*, but careful preliminary studies of the method were necessary. Older dogs were more resistant to *A. caninum* than the younger ones, but no increase of resistance could be demonstrated in dogs as the result of a previous infection if all the worms had been removed.

One of the important new developments in technic was the use of the Baermann method in

recovering hookworm larvae from the organs of infected animals. In this way it was found that some of the larvae remained undeveloped but alive in the tissues of the host for several weeks after the infection was contracted. It was thus possible to account for many larvae which would have been lost in experiments with the earlier methods.

Alabama Research Laboratory

The research laboratory under the direction of Dr. and Mrs. Fred C. Caldwell has continued studies on the factors influencing the development of the ova of human and pig ascaris and the effects of sea-water on the development of hookworm ova and larvae. Work was also undertaken to establish an ova-parasite index for *Ascaris lumbricoides* and *Trichuris trichiura*. In addition an epidemiological investigation was undertaken to determine the causative factors involved in the high incidence of ascaris and trichuris in the hospitals for the insane and the home for the feeble-minded in Alabama. This study established the fact that infestation was being acquired after admission to the institutions and was most pronounced among the violent and untidy patients. A survey of the institution yards showed that pollution of the soil there was the principal cause of infestation.

The laboratory offered its facilities to a number of research workers and health officers during the year.

Hookworm Investigations in Egypt

In recent years the hookworm egg count as a measure of the intensity of infection has gained an important place in investigations of hookworm disease. No hookworm survey is now considered complete without estimates of the number of hookworms harbored by the individual in addition to the statement of the extent of infection. Without this information it is difficult to decide whether conditions necessitate campaigns of treatment along with the drive for better sanitation. Practical methods have been devised for determining the number of hookworm ova in a gram of feces and for estimating the number of hookworms from this egg count.

The usefulness of the egg-count method, however, has so far been limited largely to studies of infections with hookworms of the species *Necator americanus*, for the recent experimental work has been done mostly with this worm. Factors have heretofore not been available for computing from the number of ova in the feces the estimated number of *Ancylostoma duodenale*, the other important hookworm species parasitic in man. The importance of ascertaining these factors is great, as *A. duodenale* is prevalent in several

parts of the world and does greater damage to man than *N. americanus* in proportion to the number of worms harbored.

An opportunity to secure the much needed ova-parasite index for *Ancylostoma duodenale* presented itself in 1927 in Egypt. The Foundation sent a representative, Professor D. L. Augustine, to work with the members of the staffs of the Egyptian Health Department and the Cairo Medical School in a cooperative investigation of hookworm.¹ They were able not only to determine the required ova-parasite index for *A. duodenale*, but to obtain a similar index for the large parasitic roundworm, *Ascaris lumbricoides*. As had been believed by several earlier observers, the female *A. duodenale* lays several times as many eggs daily as does *N. americanus*. It should soon be possible to estimate the intensity of infection with that highly injurious parasite of man, the "old world" hookworm. The work in Egypt included observations of the injury produced by *A. duodenale*, and its prevalence in people from different parts of Egypt. All hookworms found were of this one species.

Hookworm Research in Madras

Under the direction of the Foundation's representative a study of hookworm infection was

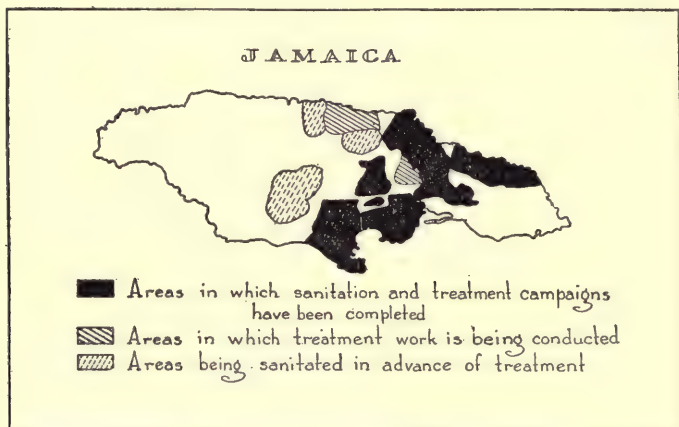
¹The results of this survey should soon be available in a published report.

carried on in the Madras Presidency, India. Newly acquired infections with *Ancylostoma duodenale* were shown to produce much greater damage than is experienced from infections acquired over a long period of time. The fall in the amount of hemoglobin in the blood was rapid and striking. Studies were under way to determine a longevity curve for hookworms in the intestinal tract. Trials of tetrachlorethylene, a vermifuge which has been recommended for use in the place of carbon tetrachloride, gave encouraging results.

Broadening Health Program in Jamaica as a Result of Hookworm Campaign

The antihookworm work carried on in Jamaica during the past nine years has made steady and satisfying progress in teaching the fundamental principles of disease prevention through practical demonstrations. This method has secured the helpful cooperation of the people themselves in developing permanent health agencies. As a result of constantly increasing activity in disease prevention the mortality rate for Jamaica dropped from 28.0 per thousand in 1921 to 20.5 per thousand in 1926. Other factors involved in the reduction of the mortality rate have been better living conditions and improved health among the school children.

Up to the end of 1927 treatment campaigns, which are undertaken in areas previously sanitated by the Government, had been conducted in the parishes of Clarendon, St. Catherine,



Areas of Jamaica in which antihookworm work was conducted during the period 1919 to 1927.

St. Mary, and Portland and the corporation of St. Andrew and Kingston, reaching approximately two-thirds of the population of the island. These parishes have permanent departments of sanitation with trained sanitary staffs for inspection and maintenance of latrines.

Sanitation is being rapidly extended. In 1927 the sanitation unit, supported by the central and local boards of health but supervised by the Foundation's representative, carried on latrine construction in advance of curative work

in areas in Portland and St. Ann parishes, involving a population of more than 25,000. At the close of the campaign practically every home in these areas was provided with a sanitary latrine, although less than 4 per cent of the dwellings were so equipped when work was begun. An outstanding feature of the Jamaica public health program is the readiness with which people cooperate in building substantial latrines, so that the cost of the work to the parochial boards does not in general amount to more than the salaries of the sanitary inspectors.

The type of pit latrine installed has steadily improved. Soil conditions in certain areas require that the walls of the latrine pit be stone-packed and the superstructure placed on a cement base which further strengthens the pit and prevents access of surface water. The cement foundation may be extended several feet above the ground in districts subject to flooding or where ground-water is near the surface. A special squatting type of latrine has been designed for public markets and for the use of estate laborers; this type has been approved by the United Fruit Company for many of its estates in Jamaica and has received the commendation of the Secretary of State for the colonies.

Two treatment units were employed during 1927, one of which has been supported by the

Government since May, 1926. Toward the second unit the Foundation contributed 75 per cent of the budget during the first four months of 1927 and 50 per cent for the balance of the year. Curative measures were carried on in demonstration areas in four parishes, namely, St. Andrew, St. Catherine, St. Mary, and Portland. Improved methods of treatment have been developed, the most important of which is the group system whereby those requiring hookworm treatment assemble at convenient central points to receive medication, thus making it possible to treat large numbers of people in a single day. A total of 14,584 persons were given 29,425 treatments by the two units.

Field studies carried on during the year included: effects of different soils on the intensity of hookworm infection, the group method of treatment, effects of varying degrees of infection, and maintenance of sanitation following a hookworm campaign.

The bureau of health education, which is supervised by a Foundation representative, continued to serve as a clearing house for health education in conjunction with the various public health problems receiving practical consideration in the colony. Efforts are directed to popularizing health activities and shaping public sentiment along constructive lines. The bureau

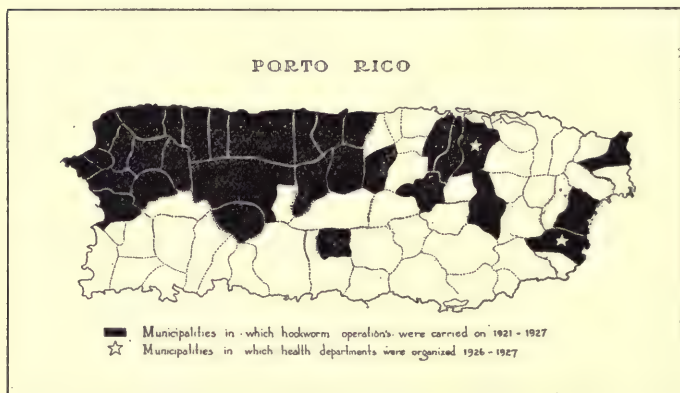
also supervises the units of sanitation and hookworm treatment, assists in the development of school hygiene activities, and cooperates with private organizations interested in promoting public health work. One of the most important phases of its work is the maintaining of contacts with the parochial boards with a view to stimulating and encouraging popular interest in disease prevention and other public health activities, including the enactment of uniform health laws.

During 1927 the bureau increased and extended its program of intensive health education to meet the popular demand from all parts of the island for information regarding disease prevention and health conservation. The monthly circulation of its official bulletin was increased to 10,000 copies before the close of the year, and requests for this publication were received from thirty foreign countries. The bureau cooperated with all parishes in organizing health programs for use during Empire Health Week which was more widely observed in the colony than ever before.

Government Assumes Support of Hookworm Program in Porto Rico

The year 1927 marked the termination of a seven-year period of collaboration on the part of the Foundation and the Government of Porto

Rico in an active hookworm program. The fundamental principles involved were intensive sanitation of selected rural areas by the Government, followed by treatment of the infected



Map of Porto Rico showing the municipalities in which hookworm campaigns have been conducted and those in which health departments have been established.

population in their homes, according to the intensive method. An extensive program of health education adapted to the needs of the population accompanied and followed these activities.

A total of four treatment units have operated in the field; two of these were financed jointly by the Government and the Foundation over five-year periods, and two were supported entirely by Government from the time of their organization. Treatment work has now been taken over as a permanent function of the bureau

of rural sanitation of the insular Department of Health.

Porto Rico represents the first country in the new world to undertake a campaign against hookworm disease on a large scale. Following the discovery by Dr. Bailey K. Ashford in 1899 that this disease caused the anemia prevalent in the island, the Porto Rico Anemia Commission commenced treatment work in 1904 but, in spite of vigorous measures over a period of years, hookworm disease remained one of the most serious problems confronting the Department of Health.

At the invitation of the Government, the Foundation undertook a hookworm survey in 1919. This disclosed a 90 per cent infection among the rural population of the island, with a relatively high degree of infestation. A cooperative project in hookworm work was then decided upon, and in 1921 the Porto Rico Uncinariasis Commission undertook a demonstration in the Quebradillas area, the first treatment unit operating under a joint agreement, which terminated December 31, 1925.

In 1923 the bureau of uncinariasis was created in the insular Department of Health to direct rural sanitation and treatment measures. The Foundation's representative in Porto Rico was placed in charge. A second treatment unit

commenced work under a five-year agreement which was concluded December 31, 1927. Beginning in 1924 the hookworm program was greatly extended and an active island-wide campaign of rural sanitation was undertaken. Improved standards of latrine construction were adopted and have been upheld. On July 1, 1925, the name of the bureau of uncinariasis was changed to the bureau of rural sanitation and the direction placed in the hands of a Porto Rican medical officer whose staff at the end of 1927 included three physicians and approximately 125 sanitary inspectors. The Foundation representative serves in an advisory capacity.

Since the inauguration of intensive hookworm work in 1921, thirty-one of the seventy-six municipalities in Porto Rico have benefited by sanitation and treatment campaigns which have covered practically the entire northern section of the island. Approximately one hundred and fourteen thousand acceptable latrines have been built, affording sanitary protection to about seven hundred thousand persons representing one-half of the entire population of the island, while more than eight hundred and thirty thousand hookworm treatments have been administered to about three hundred and twelve thousand persons representing more than one-quarter of the rural population.

As the work has progressed, the Government has assumed an increasing share of the costs of the hookworm program, so that during the seven-year period insular government appropriations have shown remarkable growth, ranging from \$30,000 in 1920 to \$250,000 available for the bureau of rural sanitation in 1927.

The educational aspects of hookworm control have formed an essential part of the work undertaken in Porto Rico. The bureau of health education, which was established in the insular Department of Health in 1926, has stressed the importance of hookworm control measures. Health institutes for rural teachers, organized through the joint efforts of the departments of Agriculture, Health, and Instruction during the latter part of 1926, were concluded January 31, 1927; practically the entire rural teaching staff participated in lectures and demonstrations which covered a wide field of preventive medicine including hookworm disease, malaria, and communicable disease control. According to a plan adopted in 1927 by the University of Porto Rico, one hundred students in groups of ten were given practical instruction in antihookworm measures by one of the treatment units.

Field studies and research by Foundation representatives have resulted in important contributions to the epidemiology of hookworm

disease. These have been recorded in annual reports of past years.

The Foundation will continue its collaboration with Government in hookworm work, but financial participation will be limited largely to a resurvey of those areas in which antihookworm measures have been carried out.

Hookworm Work in Three States in Mexico

In Mexico measures for the reduction of hookworm disease were continued in the states of Vera Cruz and Oaxaca, and inaugurated in the state of Chiapas. The Federal Government provided 80 per cent of the budget for this work in 1927, the fourth year of the cooperative program. Three field units worked in nine areas giving treatments and supervising latrine construction; 126,799 treatments were administered to 61,877 persons, and 5,179 sanitary pit latrines were constructed.

One of the most important developments of the work in Mexico has been the provision for full-time sanitary personnel by the state governments. The Department of Health of the state of Vera Cruz continued to lend the services of a number of sanitary inspectors to the hookworm campaign to promote latrine construction. In addition, the state has undertaken presanitation in several areas with a view to minimizing

reinfestation after treatment campaigns have been initiated. The states of Oaxaca and Chiapas have each furnished a full-time sanitary inspector, whose work is the first of its kind supported by these states.

Substantial progress in the reduction of hookworm disease was made in the state of Oaxaca, where heavy infestation prevailed. The governor of the state received from the councils of many Indian villages expressions of popular appreciation of the campaign.

In the state of Chiapas antihookworm measures were initiated in the Tapachula area, where a preliminary survey had disclosed an unusually high infestation rate with numerous cases of the disease in advanced stages.

To determine the amount of reinfestation in the Alvarado area of the state of Vera Cruz, where treatment and sanitation were concluded in 1925, an investigation of sanitary conditions and hookworm incidence was started toward the end of the year.

Development of the Hookworm Program in Central America

Costa Rica.—Hookworm work in Costa Rica was entirely supported by the Government in 1927. The Foundation's representative in Panama continued his visits to the country however,

to supervise hookworm activities and to confer with health officials in the further development of a well-rounded health organization. A Ministry of Health and Public Service was created by act of Congress during 1927. During the year 24,100 persons were examined for hookworm infection and 59 per cent of these were found to be infected. Treatments were administered to 13,043 persons. More than a thousand sanitary latrines were constructed, and 596 insanitary ones were repaired.

Guatemala.—During the past year which represents the third of a five-year cooperative agreement with the Government of Guatemala, the Foundation paid 25 per cent of the cost of antihookworm work and the Government provided the remaining 75 per cent. Under the general direction of a representative of the Foundation, four field units and a central office were engaged in hookworm work which was carried on in eight departments. A very large proportion of the rural population has benefited by treatment measures, but prevention of hookworm disease through sanitation has been slow in development. It is anticipated, however, that the recent appointment of a special inspector, who visits the areas in which field units are active, will bring about greater progress in latrine construction. Mass treatment has been

increasingly employed; 19,725 persons were treated.

Honduras.—A representative of the Foundation spent several months in Honduras assisting the Government to reestablish some of the important health services. Hookworm work was reorganized, and a permanent post was created in the town of San Pedro on the north coast, from which a general health program will be developed for the entire northern and northwestern section of the country. Infection surveys on a quantitative basis were initiated in the departments of Cortés and Santa Bárbara, and before the close of the year field dispensaries were operating in several towns.

Nicaragua.—A Foundation representative continued to supervise the activities of the division of rural sanitation and local health organization of the national Health Department of Nicaragua. The progress of the work was retarded by disturbed political conditions, but the regular health service was able to function. Hookworm work was conducted in ten of the fourteen departments, and 22,059 persons received 34,701 treatments.

Panama.—The Foundation continued to aid the Government of Panama in a hookworm campaign. Ambulatory dispensaries carried on latrine construction and treatment work in ten

municipal districts which included twenty-six towns and 112 villages. During the year 23,111 persons received 60,454 treatments, the largest number administered in any year since the initiation of the campaign in 1914. A program of health education was also carried on; 145,971 persons were reached by means of public lectures and informal talks in schools and at the homes.

The permanent service of latrine construction and maintenance continued in the five provinces where treatment measures have been terminated. To promote this work, the national Department of Health furnished additional personnel for several months. Provincial sanitary inspectors have under their supervision 47,647 dwellings which house 70 per cent of the rural population; 42 per cent of the homes are provided with latrines.

As a routine measure of the campaign, hookworm egg counts by the Stoll displacement method have been made on a sample population of each district where work has been conducted. In two districts of the province of Panama, where treatment campaigns were terminated in 1927, racial and soil conditions varied to such an extent as to warrant a special analysis of the routine egg counts. The results of this study support the preliminary conclusions of the research group working at Penonome last year,

namely, that the natural conditions existing in Panama are generally favorable for the acquisition of severe worm burdens.

Salvador.—The hookworm work in Salvador was continued by the Government without financial assistance. The Foundation's representative in Nicaragua served as adviser, however, and made occasional inspections of the work. The number of persons treated during the year was 14,903. New latrines were constructed to the number of 682, and 876 were in process of construction at the last inspection by the Health Department.

Hookworm and Sanitation Campaign in Colombia

In Colombia the Foundation continued to aid the Government in a hookworm campaign. Its representative served as director of the work, but he placed increasing responsibility on his associates and devoted a considerable part of his time to field inspections. He was also available to the Director of the national Health Service for consultation regarding the development of the activities of the service.

As the value of the hookworm campaign seemed sufficiently well established, it was planned to concentrate and intensify the hookworm work in those departments which showed a willingness to cooperate. It was decided to place an increasing emphasis on the construction

and maintenance of latrines. This policy may cause a slight diminution in the large number of treatments being administered annually, but it should result in a greater amount of permanent reduction of hookworm infection.

During the year 418,065 hookworm treatments were administered, 12,589 new latrines were constructed, and 1,448 insanitary latrines were repaired. The training of prospective microscopists and sanitary inspectors of the hookworm division was continued in Bogotá.

The financial support of the work by national and departmental governments has been encouraging. The national Congress voted funds well in excess of the amounts pledged under the agreement with the Rockefeller Foundation, and in addition seven of the departments appropriated a total of approximately \$64,000 toward the work within their boundaries.

Combating Hookworm in Paraguay

As the hookworm campaign in Paraguay completed its fourth year under a cooperative agreement between the Foundation and the Government, the results accomplished were felt to be very gratifying. There has been a decided improvement in the sanitary conditions of the districts where treatment has been administered. However, the work of the service is becoming increasingly difficult with the extension of the

campaign to the more sparsely populated districts of the country. The four treatment units in operation during 1927 completed work in thirty-one areas, reaching 108,414 persons. The construction of sanitary latrines was given special emphasis. In the course of the year, 26,211 latrines were installed in many sections of the country and an attempt was made to maintain in a sanitary condition those already constructed. An educational program has played an important part in the progress of the work. The 436 lectures which were given were attended by 92,934 persons.

Hookworm Survey Nearing Completion in Venezuela

In accordance with an agreement between the Foundation and the Government of Venezuela, a hookworm infection survey of that country was undertaken in 1927 simultaneously with a malaria survey. A member of the Foundation's field staff served as director of both undertakings, and the Foundation contributed funds toward the budget of the work. The hookworm survey was begun in the Maracay area of the Lake Valencia region in February; examinations were made in different parts of the country to determine the incidence and intensity of this disease. By the end of the year about nine thousand examinations had been completed which included egg and worm counts.

A definite hookworm program was approved by the Government, and an adequate sanitation ordinance was promulgated prohibiting soil pollution and requiring the construction and use of latrines. An intensive latrine-building program was initiated in Maracay and the vicinity in the late summer to secure adequate sanitation well in advance of treatment. An educational campaign was started. Treatment was administered to soldiers stationed in Maracay and to the inmates of an institution in that town.

Hookworm Reduction in the Mines in Spain

In Spain activities for the reduction of hookworm infection in mines were continued with the aid of the Foundation. Since the measures introduced in the provinces of Jaén and Córdoba in 1926 demonstrated clearly the feasibility of anti-hookworm work in mines, the campaign has been steadily extended to include privately owned mines in the provinces of Sevilla and Ciudad Real. The larger mines in which operations are being carried on have organized individual laboratories and appointed adequate personnel for examination and treatment work. Smaller mining companies have combined in groups to establish central laboratories. Government regulations require that every miner be reexamined each year.

A very effective program is now operating. Many mines have been properly sanitized and



Type of latrine now being used in the mines of Spain (left).

East Indian laborers installing bored-hole latrine with mud screen, a type which is proving very satisfactory in the Orient (below).



Member of the Mexican hookworm campaign staff giving a talk in a village home.



Group assembled for hookworm treatment, Penang, Straits Settlements.



Laboratory of the sanitary campaign staff, Penang, Straits Settlements.

satisfactory maintenance work is carried on. Hookworm infection has been practically eliminated from some of the mines, and a large proportion of the miners have been cured. To provide a well-trained personnel for this work, special courses of lectures on the prevention of hookworm infection in mines as well as practical work have been given to sixty-two provincial medical officers, mine physicians, local doctors, and others, in the provinces of Jaén, Córdoba, Sevilla, Ciudad Real, and Huelva.

Since hookworm infestation is confined principally to the coal and lead mines of the southern provinces, visits of inspection were made to various mines in this section. A study of soil infestation was made in the municipal district of Murcia with a view to initiating antihookworm work in that area during the coming year.

**Permanent Hookworm Program Making Satisfactory
Progress in Ceylon**

The Foundation continued to assist the Government of Ceylon in a hookworm program by assigning a representative to act as adviser and participate in the administration of the work, and also by contributing toward the expenses of a rural health unit, which is taking over the hookworm work in the area within its jurisdiction. The effort to reduce the prevalence of hookworm disease first in the areas of heaviest infestation

was continued. The medical services of various plantations treated the laborers at semiannual intervals. In addition, hookworm treatment



Provinces of Spain in which measures or the reduction of hookworm disease and malaria have been aided by the Rockefeller Foundation.

was given to practically all persons applying for medical relief at public hospitals or dispensaries. The total number of hookworm treatments administered in 1927 was 1,573,955, of which 1,039,003 were given by government hospitals

and dispensaries. All tea and rubber estates, about 2,000, were offered an opportunity for one day's treatment of their laborers. Of the total 159,431 laborers passing through Mandapam camp on the way from India to Ceylon, 141,720 were treated for hookworm infection.

During the year, 302 latrines were built in villages, bringing the total number constructed since the inauguration of the hookworm campaign up to 6,128; on estates 2,112 new latrines were constructed bringing the total up to 4,182. In the schools of the island 162 latrines were in-

stalled during 1927. Educational measures described in previous annual reports of the Foundation were continued during the year. It was arranged for the Department of Medical and Sanitary Services to take over the hookworm campaign at the end of the year and to conduct it in connection with the sanitary division. All the schools in the island have been visited once and some of them twice since the inauguration of the campaign.

**Hookworm Campaign Developing an Island Health
Administration in South Pacific**

The Foundation representative in the South Pacific (South Sea Islands) has assisted various island groups in the development of public health work, particularly the reduction of soil pollution. In the Fiji Islands the Indian sanitary inspectors appointed to undertake hookworm measures in districts where Indians predominate have succeeded in installing latrines at almost every home. Investigations show that these latrines are being increasingly used.

In Western Samoa unsettled political conditions have retarded health progress, but the support of public health work is assured. In Tonga, practically 72 per cent of the population of the kingdom have been treated for hookworm infection. Latrine construction has been rapidly extended; the concrete slab type has proved very

popular. The outlook for an improved water-supply for the entire kingdom is encouraging.

Progress of Hookworm Program in Siam

In Siam the five-year program in hookworm control in which the Foundation is collaborating entered its fourth year. During this period the hookworm work at Lopburi was expanded into a health center project, and the construction of latrines and their maintenance were thus made functions of a permanent agency.

Men, selected as far as possible from among field dispensers, have been trained as sanitary inspectors and left in the counties where hookworm units had completed their programs of mass treatment. Forty-three counties have been supplied with inspectors, who have continued treatments and promoted the construction of latrines. They have given over 4,000 lectures on general health topics to approximately 85,000 people. To supplement the practical field experience of these men the course for sanitary inspectors was again conducted in 1927. In December an eight-weeks' course for health officers was commenced. About thirty provincial health officers were enrolled, as instruction was planned to meet their special needs.

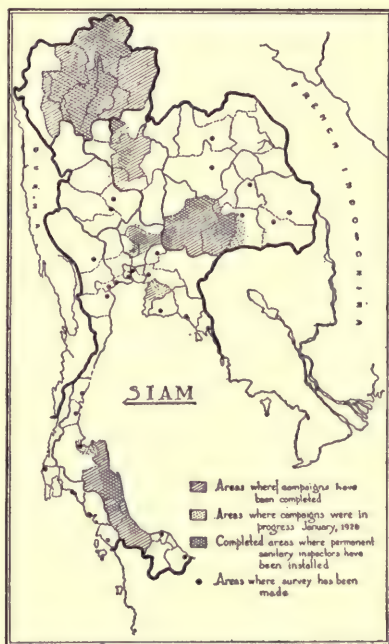
Seven treatment units operated in Siam during the year, treating 174,056 persons. Following

the treatment campaign efforts were centered on soil sanitation resulting in the construction of 61,318 new latrines and the reconditioning of 3,350 old ones. A

field laboratory unit covered a number of the towns of the interior of Siam, spending approximately a month in each community. This unit devoted a large part of its time to the instruction of physicians and health officers with regard to the taking of specimens, which were shipped to the laboratory in Bangkok

for examination. The field laboratory unit also conducted surveys to determine the hookworm incidence in the different localities.

The section of public health education, organized in 1926, carried on an active campaign during 1927. Of a total of 8,905 lectures, 6,927 were



Areas of Siam in which hookworm and rural sanitary campaigns were conducted, 1917-1927.

devoted to hookworm and were attended by 148,402 persons. A Foundation representative served in an advisory capacity with the Department of Public Health.

Hookworm Campaign in the Straits Settlements

As one of the first steps toward the introduction of a well-balanced health program in the Straits Settlements, hookworm examinations and treatments have been largely employed. This work has had for its object the establishment of a sanitary system of night-soil disposal throughout the colony, intestinal parasite surveys and treatments, inauguration and development of district health centers, and the advancement of public health education.

An examination of 13,603 persons revealed the fact that 89 per cent were harboring intestinal parasites, 62 per cent being infected with hookworms and 63 per cent with roundworms. As a result of these findings 32,515 persons received treatment. Sanitary progress was indicated by the 1,933 latrines which were constructed or repaired during the year. In order to encourage the wearing of shoes as a safeguard against hookworm infection a local shoe manufacturing company was induced to design an inexpensive shoe; 2,000 pairs of these shoes were donated by the company as its contribution to public health education.

The Foundation representative who served as director of the rural sanitation campaign was aided by government personnel including an assistant surgeon, a sanitary inspector, and five nurses.

**Education the Chief Factor in Improved Rural Health
Conditions in the Netherlands East Indies**

In the Netherlands East Indies the Foundation representative, as director of the Division of Health Education, has continued general supervision of the program of rural sanitation and public health education which is being developed. With the extension of work to the residency of Surakarta, operations were under way in eight residencies in Java and in the Lampongs Districts of Sumatra in 1927. These activities constitute a permanent part of the program now being organized to improve village health conditions. The expansion of the work has been conservative in an effort to keep within the limitations imposed chiefly by lack of trained medical personnel. During the year favorable progress was made at all rural posts except in the residency of Bantam in West Java, where the work was retarded by adverse political conditions. Since the inauguration of the campaign in 1925, there have been written into the sanitary census 346,894 houses, of which 201,127 are equipped with sanitary latrines. More durable types of latrines are being constructed.

The importance of school latrines is being systematically emphasized.

Through the Division of Health Education, the educational aspects of the work have been carefully developed and broadened in scope. Mobile instruction cars have proved a valuable factor in stimulating and sustaining popular interest and support. During the past year there were three demonstration cars in the field, of which two were supported by the Government and one by the residency of Jokyakarta. Operations are carried on not only in new areas where campaigns are being initiated but also in districts where work is in progress or reinspection is about to begin. The cars carry charts, models, lantern slides, and moving picture equipment; they are also fitted up to serve as mosquito-proof quarters for the personnel. A trained demonstrator accompanies each car and follows a carefully prepared program consisting of informal talks at schools and in public places as well as practical home demonstrations to small family groups.

Requests for educational material have been so numerous that it has been difficult for the central office of the Division of Health Education to meet the demands. In response to a growing interest in public health, courses in elementary hygiene were given in the residency of Banjoemaas by the residency physician and his assistant

to groups of teachers, government officials, and others; even remote districts were able to participate in such instruction. At the conclusion of the course a certificate of attendance was presented. Native government doctors of the residency of East Priangan gave weekly lectures in Malay or Sundanese. Instruction in hygiene in government schools has been extended owing to the fact that local residency directors of the campaign are beginning to realize the importance of health teaching among children of school age.

The Division of Health Education has given educational material to the city of Semarang with the understanding that the lectures on public health follow the same general outline observed at the various rural posts. The division assisted the city of Soerabia in organizing and initiating a program of health education and sanitation. Requests for aid in developing similar campaigns have been received from many parts of the Netherlands East Indies.

The approval of the central and local governments has been translated into increased appropriations to develop and extend this work. In the residency of Surakarta, a few large sugar companies have given financial aid to assure support of operations in that area; these contributions are handled through the local residency council as residency funds.

The Foundation's representative visited the island of Bali in 1927 in response to an official invitation to inspect local health conditions.

**Intensity Survey Defines Hookworm Problem in the
Madras Presidency**

The intensity survey of hookworm infection in the Madras Presidency, India, was completed in October, 1927. This survey, which covered twenty-five districts and the Mandapam labor camp, involved 58,017 egg counts and is the most extensive study of this kind undertaken in any part of the world. An analysis of the survey findings has made it possible to define the areas in Madras where hookworm infection is of economic importance. Infection rates vary in different districts from 12 to 94 per cent; the average for the presidency is 73 per cent. It is shown that infection is acquired at an early age and between the tenth and twentieth years reaches a maximum which is maintained practically throughout life.

The highest average egg count, 1,377 eggs per gram, was found in the Ganjam district. This represents an average of approximately 110 hookworms per person. Ten other districts approached this average, namely, Chingleput, East Godavari, Malabar, Nellore, South Arcot, Tanjore, Trichinopoly, Vizagapatam, West Godavari,

and the foothills of the Nilgiris. Since the infestations are chiefly with *Necator americanus*, an average of 100 worms per person is not sufficiently important from an economic point of view to warrant the usual treatment measures. Therefore employment of the so-called mass treatment of hookworm infection is not justified in the Madras Presidency. It is believed that health education, routine treatment of all hospital and dispensary patients, and the promotion of latrine construction will reduce hookworm infection to relative insignificance. The active program now being developed is based upon these fundamental factors.

To promote a program of rural sanitation compatible with existing conditions, demonstrations in soil sanitation were continued in the Madura district and initiated in certain estate areas in the Nilgiri district. In Madura work was considerably extended. Deep pit latrines of the bored-hole type apparently meet the requirements of the Indians, as is shown by the increased use of these conveniences. Three hundred and fifty-one such latrines were constructed in 1927 in response to popular demands. Experience has proved that this type is effective, easily maintained, and economically feasible. It gives promise of solving the soil pollution problem in areas where suitable terrain conditions prevail. A steel

borer has been lent to private enterprises and to the Chingleput District Board to promote similar latrine construction in other communities.

The government health officer appointed to work on estates commenced activities on Nilgiri plantations. Initial efforts have brought about commendable improvement in sanitation, and the favorable reaction of estate labor in the use of sanitary latrines augurs well for the future. Treatments have been administered only in villages or on estates where sanitation was in progress. Toward the end of the year curative work was undertaken among school children in the Madura, Chingleput, and Malabar districts. A total of 24,123 treatments has been given.

Educational work through the media of lectures, demonstrations, films, and charts was carried on in every district in the presidency. Types of latrines suitable for village needs were exhibited at fairs and festivals. In the Madura district important educational work was accomplished by installing a sufficient number of bored-hole latrines to accommodate several thousand pilgrims assembled for religious functions. Approximately 137,686 persons were reached by lectures and, in addition, the films on hookworm and malaria attracted many thousands of people. All government hospitals and dispensaries are required to treat hookworm infection as a routine

measure in accordance with a government regulation effective April, 1927. This work is developing favorably. Approximately 76,000 treatments were administered during the year. It is anticipated that between a million and a half and two million treatments will be given annually in these institutions.

Plans to administer one treatment each year to school children, led the Government to provide funds to develop a program of treatment, education, and sanitation in all schools where medical inspection is conducted. Work was initiated in Madura, Chingleput, and Malabar districts by members of the campaign staff who instructed school medical inspectors in treatment technic.

Survey of Health Conditions in the Native State of Mysore, India

The invitation of the native state of Mysore, India, for a public health survey was accepted, and a member of the field staff sent to direct the work. Efforts are being made to determine the incidence of hookworm infestation and malaria, which are reported to be serious health problems.

By the close of the year the first spleen survey was completed except for some small areas; 8,143 children had been examined, of whom 36.1 per cent showed enlarged spleens. Of 3,038 persons examined for hookworm infestation,

77.5 per cent were infected. Egg counts were employed in the case of 2,713 persons, of whom 78.3 per cent were found positive, with an average egg count of 2,200 eggs per gram.

VI

Aid to State and National Health Services

The development of modern practises in public health administration has created a desire on the part of central organizations of many state and national health departments for divisions better able to handle their growing problems. In an effort to aid in meeting these new demands the Foundation has extended assistance to the following divisions of state health departments in the United States: sanitary engineering in six states, vital statistics in seven, epidemiology in eight, and public health laboratories in six.

The organization and maintenance of certain essential services in the national health departments of nineteen foreign countries were assisted through financial appropriations or by lending the services of representatives.

Sanitary Engineering

The Foundation is assisting the governments of Central America in the solution of their sanitary engineering problems by making available the services of a sanitary engineer with head-

quarters in Panama. This representative is aiding the Government of Panama for a two-year period to organize the division of sanitary engineering which was created by presidential decree in April, 1927. The division is directed by a Panamanian who studied sanitary engineering in the United States under a Foundation fellowship. Activities in 1927 have consisted chiefly of supervising drainage operations in conjunction with the antimalaria project at Aguadulce. The problem of safe water-supplies for the city of Bocas del Toro was also studied, and plans are under consideration for a drainage system for the city of David.

A sanitary engineer from Costa Rica is being trained in the United States under a Foundation fellowship. Upon his return, he will organize a division of sanitary engineering in the national Department of Health. In the meantime the Foundation's engineer is cooperating with the Health Department in the development of several projects and has given expert advice regarding the purification plant for the water-supply of San José, the water and sewer systems for the city of Limón, and the construction of artesian wells in villages and rural areas.

The Foundation's engineer visited Honduras and assisted the Government in installing a water chlorinating system in Tegucigalpa.

His advice was also sought in the proposed plans for effective sewerage and sewage treatment for the capital city. In Salvador, he was instrumental in adjusting certain difficulties which developed in connection with the water disinfection apparatus for San Salvador. He was consulted by the division of sanitary engineering of the national Health Department of Nicaragua with regard to the purification of the water-supplies and the safe disposal of sewage. As a result, four chlorine machines were installed in Granada and one in León, and the local sanitary engineer was trained to operate them. The water-supply of Masaya was also improved.

The sanitary engineer whose services the Foundation had agreed to lend the Government of Venezuela completed his survey of the water-supply of the city of Caracas and returned to the United States. A bureau of sanitary engineering was created in the national Health Department in September, 1927.

An engineer was lent to the Government of Ceylon to aid in organizing a division of sanitary engineering in the Department of Medical and Sanitary Services. Work is already under way; problems dealing with safe water-supplies are receiving special attention.

In the United States the bureaus of sanitary engineering of the state health departments of

Alabama, Idaho, Iowa, Maine, Oregon, and Tennessee received financial aid during the year.

Development of an Epidemiological Service in Denmark

To aid in developing an epidemiological service in the central health administration of Denmark, the Foundation provided funds to cover the salary and travel expenses of an epidemiologist. This work is being directed by a former Foundation fellow and supervised by the State Serum Institute in Copenhagen. The service has already accomplished constructive work in epidemic control by the thorough epidemiological and bacteriological investigations of two outbreaks occurring during the past year.

Epidemiology in the United States

The state health departments of Alabama, Kansas, Mississippi, Rhode Island, South Carolina, South Dakota, and Tennessee were aided in developing divisions of epidemiology, and financial assistance was provided toward maintaining a division of communicable disease and child hygiene in Iowa.

To stimulate interest in the field of epidemiology, a conference of epidemiologists was held at the Johns Hopkins School of Hygiene and Public Health in May, 1927, under the auspices of the Foundation. As an outcome of this meeting a

society was formed to promote the further development of this essential public health service.

Developments in the Field of Vital Statistics

For several months the Foundation contributed toward the expenses of the newly-created division of vital statistics in the national Department of Health of Colombia. The director of the work had received special training in this field under a Foundation fellowship.

The Public Health Service of Bulgaria received funds to purchase additional equipment for the statistical bureau which it is developing and to provide clerical assistance for a period of several months.

In accordance with an agreement to assist the statistical bureau of the state Health Service of Denmark over a three-year period, the Foundation continued to provide funds for this purpose. In addition to the analysis and compilation of current morbidity and mortality statistics, the bureau has prepared, at the request of the League of Nations, a special report on mortality from communicable diseases in Denmark over a long period of years.

Divisions of vital statistics were aided in seven states in the United States, namely, Alabama, Iowa, Mississippi, Montana, Oklahoma, South Carolina, and Tennessee. Alabama and Tennes-

see were admitted to the Birth Registration Area during the year.

Aid to Public Health Laboratories

The two-year period of collaboration with the Health Department of Costa Rica in organizing and developing a public health laboratory was concluded in January, 1927. The volume of work accomplished has steadily increased from 13,184 examinations in 1925 to 33,033 in 1927. Approximately 70 per cent of the physicians of the country utilized the services of the laboratory.

Contribution was continued toward the maintenance of a small diagnostic laboratory in Guatemala City. Approximately twenty-five hundred examinations were made during the year. Plans are being matured by the Government for the reorganization of the national Health Department with provision for a more adequate public health laboratory service.

Despite disturbed political conditions in Nicaragua, the division of laboratories of the national Health Department continued to function effectively along lines already discussed in previous reports. The central laboratory in Managua and the seven branch laboratories, which are largely supported by the departments in which they are located, accomplished more than fifty thousand examinations. This service continued

to collaborate with other divisions of the Health Department in training non-medical health personnel. Opportunities for advanced laboratory

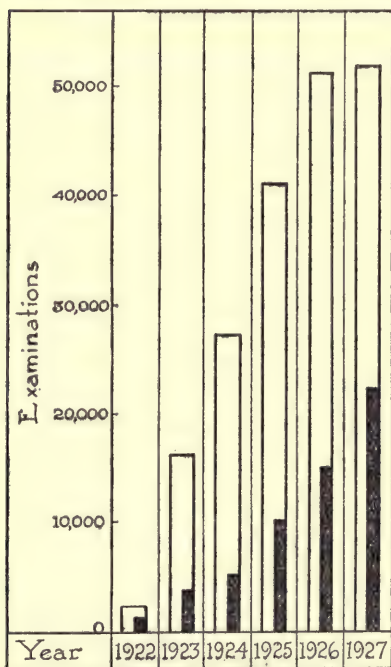


Chart showing the development of the public health laboratory service of the national Department of Health of Nicaragua. The heavy bars indicate the proportion of examinations which were of public health importance.

instruction were also available to other Central American countries.

With the advice of a Foundation field representative, the Government of Honduras reorganized the public health laboratory service of the national Health Department during the year. The director of the division of laboratories in

Nicaragua was lent to assist in this work. Two Honduran technicians received intensive instruction in laboratory technic in Managua for a six months' period and upon their return to Honduras were appointed chief of the laboratory section and chief technician respectively. The

scope of activities of the laboratory service has been broadened.

In fulfilment of a pledge to aid the Government of Colombia in developing a national public health laboratory service, the Foundation continued during 1927 to contribute toward the salary of the director of the public health laboratory in the city of Bogotá and toward that of the assistant director.

The organization of the laboratory service has been improved; several new biological products have been put on the market; and the volume of diagnostic work has shown a marked increase. Recent legislation has made possible the establishment of branch laboratories in various sections of the country so that diagnostic facilities will be more widely available in the near future.

A grant was made toward maintenance costs of the recently opened State Hygienic Institute at Budapest, Hungary, which the Foundation has also aided by providing funds for building and equipment. Support on a declining scale will be continued over a five-year period.

A Foundation representative in China continued his affiliation with the National Epidemic Prevention Bureau at Peking. Special emphasis has been placed on the importance of effective administration and the wider distribution and

sale of the biological products of the laboratory operating in the Temple of Heaven under the auspices of this bureau.

On the invitation of the Government of the Philippine Islands, collaboration with the Bureau of Science was resumed in 1927. The Foundation representative who has been lent to this division aided in developing a public health laboratory service within the bureau, undertook bacteriological investigations bearing on public health problems, studied the possibilities of an enlarged diagnostic laboratory service, and served as lecturer on sanitary bacteriology and epidemiology at the School of Sanitation and Public Health recently established in Manila.

In the United States, central public health laboratories were aided in Maine, Missouri, Texas, and Utah. In addition four branch laboratories in Alabama and one in Tennessee received financial assistance during the year.

Bureaus for Study and Reform of Health Activities

The year 1927 marked the conclusion of the Foundation's collaboration with the Government of Czechoslovakia in supporting the division for study and reform of health activities, which was established in the Ministry of Health in 1921. This bureau, organized to initiate new work in public health, has achieved its objective.

Its general program will be continued by a committee which will function under the direction of the Ministry of Health.

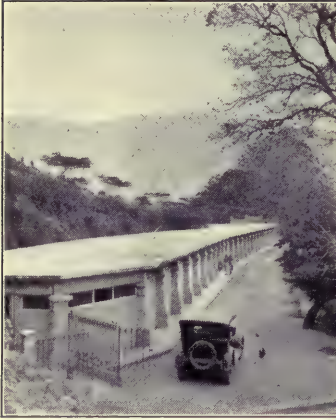
Funds were provided toward the support of the sanitary reform bureau which has functioned in the Ministry of Public Welfare of Hungary since 1925. The bureau has continued its general program of studies and investigations to improve public health conditions in the country. As a result of statistical studies already accomplished under its supervision, a thorough nationwide survey of the public health situation was initiated in 1927. This program comprised a statistical survey from the standpoint of public health; studies of all public health activities now operating in Hungary, including social insurance; and investigation of the economic and social factors which influence public health conditions. One hundred and fifty districts and fifty-two large cities have already been surveyed.

An intensive program of health education was continued through the section for public health education which is now entirely maintained by the Government. Approximately one hundred and eighty-three thousand persons in Budapest and adjacent districts were reached through lectures; the press continued its excellent cooperation and has been supplied with popular health material. Weekly lectures were held in

the Ministry of Public Welfare for resident fellows and physicians interested in public health problems. The bureau also assisted in reorganizing the former museum of hygiene into a modern institute of social hygiene which will begin to function during the coming year as the center of public health education in Hungary.

In France, since 1925, the Foundation has been assisting the National Office of Social Hygiene, which was established in the Ministry of Labor, Hygiene, and Social Welfare to promote modern public health work in the country. The Central Bureau of Nurses, also organized in 1925 with the aid of the Foundation, is affiliated with this organization. In 1927 the program of the National Office of Social Hygiene was administered along the general lines indicated in previous annual reports of the Foundation. Its activities are becoming widely known, and its facilities are utilized not only by French and foreign health authorities and physicians but also by students. A colonial service has been created through which the work of the office will be extended to the French colonies.

The government statistical service was aided in the compilation and publication of general health statistics for France for the year 1926. Graphs and maps were prepared to facilitate the development of departmental statistical services.



A covered reservoir in the city of Caracas, Venezuela.



A modern water-supply will replace this method of storing water in Limón, Costa Rica.



Public health laboratory, Temple of Heaven, Peking, operated by the National Epidemic Prevention Bureau (left).



Main building of the public health laboratory, Bogotá, Colombia.

A group of natives of Sarawak, Borneo, where a public health survey was made in 1927.



Market place in Kuching, Sarawak.



Devil dancers employed by the sick in Ceylon to drive out the evil spirit thought to be responsible for the illness.

The service of departmental and special investigations completed during the year a survey of public health organization in French departments which was begun in 1925. From the data collected, twenty-six demographic maps have been prepared. Special studies undertaken by this service include an investigation to determine the number of midwives in each department and arrondissement and also a census of subnormal children in the republic.

The service of technical studies has continued to establish contacts with many departments for the purpose of stimulating departmental health organization. This service has collaborated with public officials and with national and international committees in public health work.

The service of propaganda continued its intensive program including the development and distribution of educational material, particularly as related to the reduction of maternal and infant mortality, cancer and venereal disease campaigns, recruiting of public health nursing personnel, and the extension of the antituberculosis stamp campaign in France. Lectures given in numerous towns reached many thousands of people.

The service of information is developing an extensive public health library. It has aided in the distribution to all French departments of a

report describing the organization and operation of the health demonstration in the department of Seine-et-Marne and has met an increasing number of requests for information from both French and foreign sources.

The Advisory Board which was created in the Public Health Service of Poland in 1925, was granted funds by the Foundation to continue its activities. Since its organization, the board has investigated several outstanding public health problems and has prepared adequate and unified drafts for health legislation for the country.

Studies of certain endemic diseases in Poland were further developed or concluded during the year. A statistical analysis of the mortality and morbidity records collected during the tuberculosis survey of Bialystok was completed. In promoting the campaign against trachoma, a monograph was prepared incorporating the findings of a special study of this disease. An analysis was made of material secured during a typhus investigation which has provided most exact and extensive information. Certain data on typhus were prepared in the form of tables and graphic material for the International Exhibition held in Warsaw conjointly with the Congress of Military Medicine. The board also continued the special study of typhoid, an important problem in Poland even in the largest cities.

In view of the need of sanitary improvement in rural communities and towns and also to stimulate local health work in different parts of Poland, the board arranged for provincial medical officers to visit the public health demonstrations now operating in the country in order to study local health organization. Ninety medical officers in addition to the group from the School of Hygiene at Warsaw participated in these study visits, which were conducted under the direction of a senior officer of the health service.

Instituting a Health Program in Sarawak

In response to an invitation from the Government of Sarawak to aid in the development of a health program, a staff member reported in Kuching August 1, 1927. During the remainder of the year he acted as advisory health officer. A general survey of health conditions in Kuching and several outstations was completed, and toward the close of the year a staff was assembled. A survey of mosquitoes in the vicinity of Kuching revealed that over 90 per cent of the anopheles were breeding in artificial ponds which could be drained without serious difficulty. Thirteen species of anophelines were identified. Antimosquito measures were instituted in the Kuching area, and funds were appropriated by the Government to provide a safe water-supply.

Measures are being adopted to reduce the wide-spread soil pollution found in all parts of the colony, and a survey to determine the prevalence of intestinal parasites has been initiated. The nucleus of a public health laboratory has been organized and a start has been made in public health education.

Other Health Activities

At the request of the Government of Finland a member of the Foundation's staff visited the country during 1927 to study its public health organization and problems. The services of a member of the staff were made available as consultant to the Government of Turkey on various problems pertaining to public health. Late in the year the Foundation granted funds to the Ministry of Public Health toward the cost of the installation and equipment of the new Institute of Hygiene at Angora which was practically completed. The institute will function as the directing center for all public health laboratories in the country.

School Hygiene in Jamaica

The Bureau of Health Education of Jamaica directs a school hygiene program initiated in St. Andrew Parish in 1925 and representing the first work of this kind ever undertaken in the

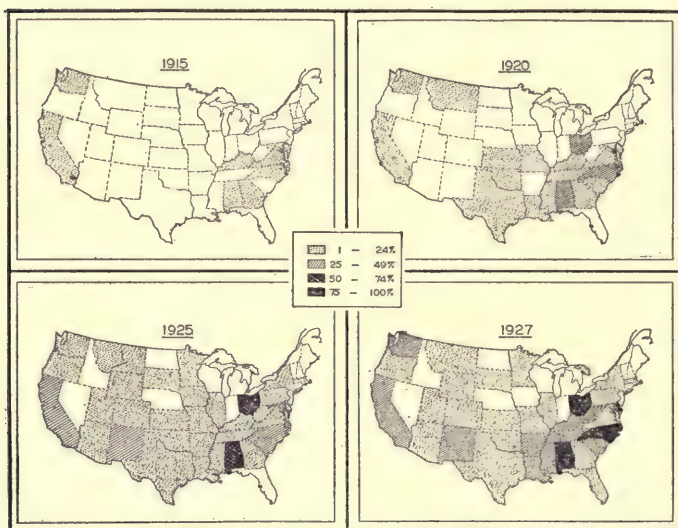
British West Indies. The work includes medical inspection; correction of physical defects, particularly those of the teeth; health education; and treatment for hookworm disease. The extension of school hygiene work to other districts in the colony was stimulated by medical examinations of school children in various parts of Jamaica. Progress in the provision of school latrines was made possible by the Government's offer to meet half the cost of installing these conveniences at schools where they were lacking.

VII

Rural Health Work

Much has been written in the annual reports of the Foundation for the past ten years on rural health work in the United States and other countries. The history of its development as an outgrowth of the hookworm control units established in the Southern United States in 1910, its organization in the typical county, and the scope of its activities have been recounted. The program of the county health department in the United States and of similar organizations in other countries is adapted to local conditions. Malaria may present the outstanding problem in one place, while typhoid prevention, maternal and infant welfare work, or any one or more of a multitude of public health activities may require

special emphasis in some other part of the world. The fundamental principles of organization, however, remain the same and the plan of financial



Percentages of the rural population of the United States served by full-time county health organizations, 1915-1927.

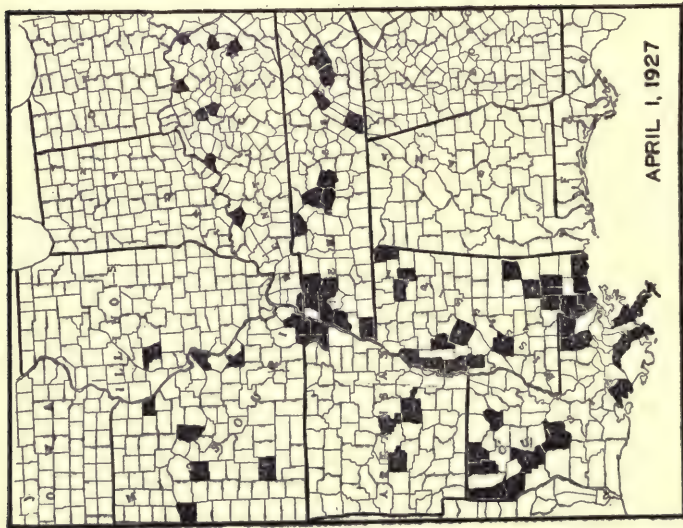
cooperation on the part of the Foundation does not vary.

In the United States in 1927 financial aid was given through official health organizations to 268 counties in twenty-three states and to budgets for health work among the flood sufferers in eighty-five counties in six states in the Mississippi valley. In addition, the following countries in various parts of the world received aid toward the development of rural health organiza-

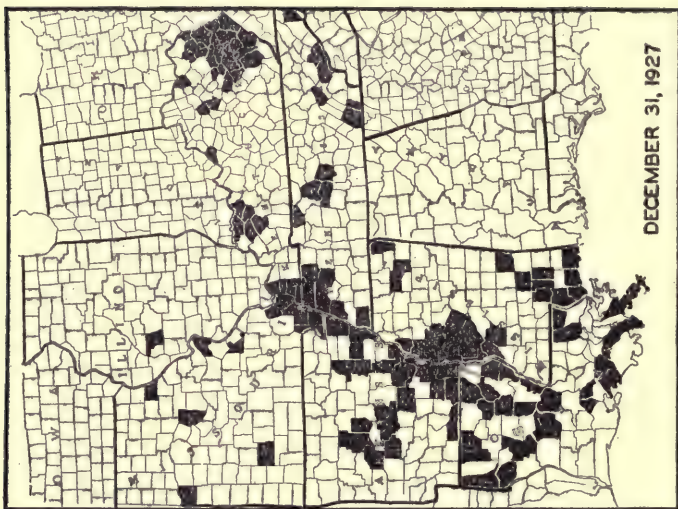
tions: Canada, Porto Rico, Brazil, Austria, Czechoslovakia, France, Hungary, Poland, Yugoslavia, Ceylon, China, India, Siam, and the Straits Settlements.

Mississippi Flood Arouses Interest in Health Protection

Following the disastrous flood in the Mississippi Valley in the spring of 1927, which affected approximately one hundred counties, a conference of state health officers was called in New Orleans by the Surgeon General of the United States Public Health Service and the Medical Director of the Red Cross to mature plans for developing county health service in the flooded districts and supplying necessary central supervision. County health departments functioning in the area before the inundation demonstrated the value of such organizations in meeting emergency health problems during the flood. The states agreed to contribute to the fullest possible extent, and with a few exceptions they were able to assume a considerable part of the cost of central supervision and 25 per cent of the county budgets. The Foundation shared with the United States Public Health Service in supplementing all budgets in accordance with established policy and, because of the emergency, they also contributed to the necessary extent toward the shares customarily assumed by states and



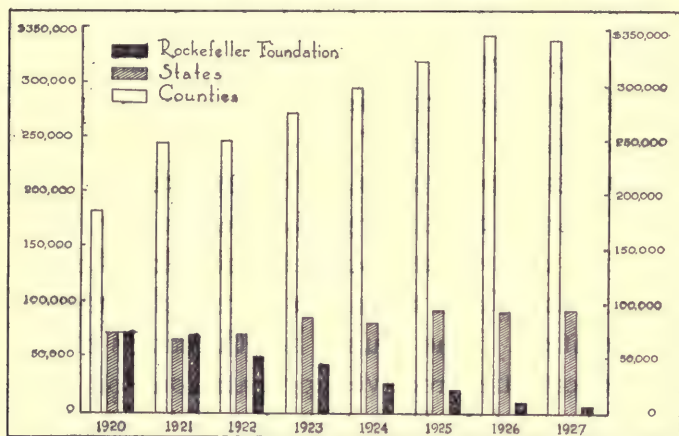
APRIL 1, 1927



DECEMBER 31, 1927

Counties in the Mississippi flood area with full-time county health services, as of April 1, 1927 (left), and December 31, 1927 (right).

counties. During the year the Foundation contributed to the budgets of eighty-five county health organizations in the flood area. While the



Funds appropriated by counties, states, and the Rockefeller Foundation toward the support of forty-two full-time county health departments in the United States, 1920-1927.

project has given rise to a substantial increase in the number of county departments in the United States, from the Foundation's standpoint participation in the flood project entailed merely the quick expansion of its established procedure. The county budgets for the flood area conform closely to those typical of similar counties in other areas.

State-wide County Health Organization

The action of the legislature of Alabama in increasing its appropriation to the state Health Department to such an extent that the benefits of county health work can be extended to every

county in the state is a strong endorsement of the efforts of that department. The Foundation is to be released from financial aid to counties benefiting in the past, but during the next two years it will assist in financing the health work of thirty-three remaining counties as a special "poor county project."

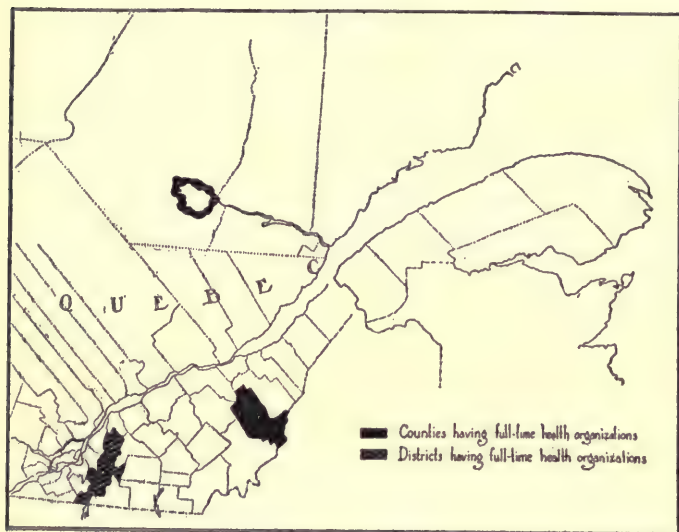
The state of Delaware by establishing full-time county health organizations in her three counties, enjoys the distinction of being the first state in the Union to have a state-wide program in operation. The county health officers of two of the counties received preparation for their work at one of the Foundation's training stations.

Rural Health Work in Canada

Although the first county health department in the province of Quebec was inaugurated as recently as May, 1926, county health organization has made remarkable progress and has become a definitely established and important activity of the provincial health department in improving rural health conditions.

Four departments operated during the year, three of which were organized in 1926; in 1927 a joint health district was established for St. Hyacinthe and Rouville counties. These organizations serve a predominantly rural population of about one hundred and forty-seven thousand

persons. In addition to contributing funds toward the budgets of these departments, the Foundation provided opportunities in the United



Areas in the province of Quebec, Canada, served by full-time local health departments.

States (Ohio) for special training in the procedures of a county health department for all newly appointed personnel preliminary to their undertaking active work. During the year the organization of three additional county health departments was approved.

Special efforts have been made to extend health work among school children by means of medical inspection, correction of physical defects, improved sanitary conditions at schools, and health

education dealing particularly with dental hygiene. Baby clinics, mothers' conferences, and mobile tuberculosis clinics have been developed. Home visiting by public health nurses has demonstrated its value in improving health conditions in the community. Communicable disease control has been stressed and morbidity reporting has shown improvement.

In 1927 rural health organization was extended to a second province in Canada, namely, British Columbia, where the local administrative unit for towns, villages, and rural communities is not the county but the municipality, which may vary in size. The first local health organization, which is similar to a county health department, was established in the fall in the municipality of Saanich, adjacent to the city of Victoria. Funds for its support were provided by the provincial and local governments and the Foundation. The medical and nursing personnel received special training in the United States.

A Varied Program of Health Work in the Rural Districts of Porto Rico

Assistance was continued to the insular Department of Health of Porto Rico in organizing municipal health departments to carry out a comprehensive program of disease prevention and health conservation under unified control.



Child health tent at the county fair, Russell Springs, Kentucky, where children were examined daily.



Street of Hazard, Kentucky, during the Mississippi flood, 1927.



Administering typhoid vaccine to a school child in rural Mississippi.



Pupils of a rural school in Sunflower County, Mississippi, being inoculated with toxin-antitoxin by a physician from the Indianola training station.

The municipality is a unit of government in Porto Rico and includes within its boundaries rural districts as well as towns. The first of the departments was established in the municipality of Río Piedras in 1926 and the second during the past year at Yabucoa, in the southeastern part of the island. These organizations are supported jointly by the Government, the municipalities in question, and the Foundation, which contributes on a declining scale over a three-year period, its financial aid during the first year of operation constituting twenty-five per cent of the total budget of the department. A Foundation representative serves as acting director of the work.

Highly creditable results have been accomplished by the municipal health departments; local physicians have cooperated effectively, particularly by improved reporting of communicable diseases. A program of health education has been carried on by visiting nurses in the homes and by medical officers at the clinics. The municipal Health Department of Río Piedras cooperated with the University of Porto Rico in receiving small groups of students, the greater number of whom were prospective school teachers, for instruction in modern principles of public health work.

Practically all school children in both municipalities were vaccinated against smallpox; active

immunization against diphtheria was well advanced by the close of the year; treatment of hookworm disease was continued until taken over by the bureau of rural sanitation of the insular Department of Health; malaria incidence was studied preparatory to campaign measures; examination of food handlers was assured. The simple diagnostic laboratory service which has been developed is highly valued by the local medical profession. In Río Piedras 9,870 laboratory examinations have been made since the municipal Health Department was organized, and in Yabucoa 5,081 examinations.

School medical inspection has been undertaken in the lower grades. Since the work was started, 1,468 school children have been examined in Río Piedras and 1,074 in Yabucoa; the correction of physical defects pertained to treatment of hookworm disease and skin infections. In the Río Piedras municipality, dental treatment has been available. Prenatal and preschool clinics were established in both municipal health departments during 1927. To facilitate home visiting, the urban portion of each municipality was divided into districts and a regular schedule of visiting maintained. In Río Piedras further coordination of health activities was secured during the year when the municipal health department took over the functions of sanitary

inspection, assumed the direction of the dental service among school children, and undertook the entire supervision of the local tuberculosis clinic.

Brazil Organizes Additional County Health Departments

The Foundation has been cooperating with the states of Minas Geraes and São Paulo, Brazil, in the development of rural health work since 1922. During this time twenty-four rural health departments have been organized in the municipalities of the two states, nine in Minas Geraes and fifteen in São Paulo. Of the twenty-four departments, seven began operations during the past year, four in Minas Geraes and three in São Paulo. Four new departments are to be established in Minas Geraes early in 1928.

Public health laboratory work has been carried on by all but one of the departments. The examinations requested by physicians continue to increase. A new sanitary code has been enacted by the state of Minas Geraes to take effect in 1928. This will be of considerable aid in improving sanitary conditions in the rural districts.

Prenatal and infant hygiene has been given special emphasis in Queluz, Barbacena, and Oliveira, Minas Geraes. Each department has maintained dispensaries and clinics which have dealt with leprosy, trachoma, hookworm, and

venereal disease. The collection and recording of vital statistics has shown considerable improvement during the year. In connection with their school hygiene the Oliveira, Queluz, and Barbacena departments have organized health clubs among the school children corresponding to the Modern Health Crusaders in the United States. This has been an important factor in stimulating interest in health work among the general population.

In the state of São Paulo an extensive outbreak of smallpox interfered with the normal activities of the departments as it was necessary to spend an unusual amount of time on vaccinations.

Four Demonstrations Operating in Poland

The Foundation continued to collaborate with the Government of Poland in the organization of public health demonstrations and also contributed funds toward the cost of supervising district health work. A demonstration was initiated in the Bendzin district, an industrial area in Kielce province, making four cooperative demonstrations now in operation in the country.

The cumulative results of the demonstration in the Mokotow district in the city of Warsaw, which has completed its third year, represent an outstanding achievement in public health work in Poland. Aside from arousing interest through-

out the country in this type of health work, it has served as a model in the reorganization of the health service of the city of Warsaw, and there are now five additional city districts with health centers similar to that of Mokotow supported entirely from local funds. The Mokotow center has added new consultation services and the attendance at all clinics has shown an increase over the preceding year. The student health officers of the School of Hygiene at Warsaw and the student nurses of the Warsaw State School of Nursing took practical training at the center during 1927. The department of public health of the Ministry of the Interior provided funds for a malaria campaign in the demonstration area, the State Institute of Hygiene furnishing the personnel. The activities of the demonstration were featured in the health exhibition at the International Congress of Military Medicine and Pharmacy held in 1927 in Warsaw.

The demonstration in the Skierniewice district has been operating practically three years and is accomplishing constructive health work despite many obstacles. The district is entirely rural and it is difficult to provide adequate medical personnel for the general clinics held at the outlying health centers since only one of the physicians of the district lives outside the town of Skierniewice. The district council has accorded

the demonstration liberal support from local funds and, with state aid, has undertaken a building program to house the village health centers, of which four operated during the year. One new health center is under construction. The students who are received from the School of Hygiene in Warsaw for practical training have an opportunity to observe a type of health work which is quite different from that in the other demonstration areas in Poland.

The health demonstration in the district of Warsaw has entered upon the second year of operation. The district has been completely organized; nine health centers are now operating and, in addition, three child welfare stations. A general program of health work is carried on at the centers; clinics are held three times each week; and the equipment necessary for simple diagnostic laboratory work has been provided.

The reduction of communicable diseases represents one of the most important fields of work of the demonstration. Reporting of such diseases has improved, and accurate statistical records, spot maps, and chronological charts are kept. The sanitary inspection service has been reorganized and the number of sanitary inspectors reduced to three. A program of school medical inspection has been developed. The service of maternal and child hygiene has been improved



Children awaiting examination at the headquarters of Yabucoa Municipal Health Department, Porto Rico (left).

School children of Porto Rico who have received certificates of successful vaccination (right).



Baby clinic, St. Jean-Iberville County Health Department, Quebec.



Health exhibit at the headquarters of the Skierniewice health demonstration, Poland.



Health center at Tanjong Tokong, Penang, Straits Settlements.

by the addition of two new child welfare stations. Under the direction of the health centers three special midwifery stations were continued and four day nurseries were established to care for preschool children. A mobile school dental clinic operated in two districts and provided dental care for 767 children. In order that the activities of the local health organization may be housed in buildings owned by local authorities, the Warsaw district council has purchased a building located in the village of Okuniew.

The health demonstration which was started in the Bendzin district early in 1927 will continue under a five-year agreement. This district, which is situated in the southern part of Kielce province, covers about two hundred square miles and is one of the most congested areas in Europe. It is composed of three independent industrial cities, one town, and nine rural areas. Over half the population of approximately three hundred thousand persons live in the three cities.

No extensive modern health work was under way when the demonstration was started, and practically all personnel with the exception of the district health officer and his assistant were employed on a part-time basis. The entire staff of the central office of the demonstration, which is located in the city of Bendzin, is now on a full-time basis. This is also the case at the four

health centers which have been established in the town of Czeladz and in three rural communities. Three nurses employed at the centers are graduates of the Warsaw School of Nursing.

The Foundation provided travel funds for the supervisor of district health work in Poland, a position created in the central Public Health Service in 1927. This post is held by a former Foundation fellow, who not only supervises the work of the four public health demonstrations and the district health work, which is supported entirely by Polish funds, but also stimulates the development of new local health projects in other areas in the country.

Full-Time Health Organizations in France

In France the Foundation collaborated with five departments in the development of health organizations through the operation of public health demonstrations which had been established in the departments of Hérault, Saône-et-Loire, and Seine-et-Marne prior to 1927 and initiated in the departments of Aisne and Tarn-et-Garonne during the past year.

Hérault.—In Hérault, the first of these departments to receive assistance, the number of full-time medical and nursing personnel supported by department funds has steadily increased since the organization of the demonstration in

1924. In 1927 the sixth assistant health officer was appointed, three public health nurses were added to the existing staff of twenty-three nurses, and three full-time medical specialists were appointed for consultations at the health centers. Health centers are being developed from the twelve dispensaries in the department, which up to October, 1926, were restricted entirely to anti-tuberculosis work. The scope of activities at these centers has been enlarged to include consultations for mothers and infants in connection with the national campaign to reduce infant mortality.

The public health nursing service has been greatly extended. The city of Montpellier has arranged to employ the public health nurses of the department rather than create its own municipal nursing staff. To assist the nurses in meeting the problems of their new activities, weekly lectures relating to various phases of public health work have been given by members of the Faculty of Medicine in that city. Results of the general nursing work started in 1926 in the demonstration district in the city have been so promising that the Council General has approved the extension of this enlarged service to the entire department.

Communicable disease control has developed satisfactorily. By the end of 1927 sanitary

inspectors had been replaced almost entirely by public health nurses whose activities, particularly in reporting diseases and in follow-up work in the homes, represent an important factor in the growth of this essential service. Isolation of cases and concurrent disinfection continue to be stressed. The shellfish industry is being carefully studied with a view to sanitation of the beds and the possible elimination of a suspected source of typhoid fever. The assistant medical officers continued systematic inspections of food, milk, and water in their respective districts.

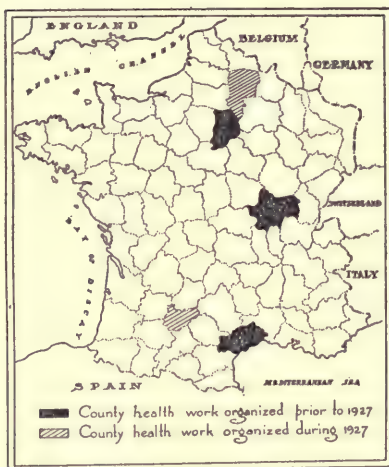
The campaign of public health education is well organized, and the development of this phase of the work has been attended with marked success. A director for the service has been appointed; activities in 1927 centered about the reduction of venereal disease and the organization of an antituberculosis stamp campaign.

The general public health program initiated in the demonstration district in the city of Montpellier late in 1926 has already exercised a significant influence on public health work in the department. With the financial cooperation of the local Red Cross, a modern health center was opened early in 1927 in a remodeled building favorably located in the district. Two public health nurses are employed. During the year there were 687 families under the supervision of

the nurses who made more than 4,400 home visits for their welfare. The district was used for the first time in 1927 as a practical training center for student nurses in the School of Nursing in Montpellier. Their work included assistance at consultations and home visiting.

The school hygiene program made good progress. Each school was visited twice during the year by

an assistant medical officer, and parents were notified of defects discovered in their children. School medical inspection in the city of Montpellier was greatly improved by the establishment of a school nursing service which became effective in October, 1927. The public health nurses visited schools, assisted at examinations of pupils, and undertook follow-up work. In cooperation with the municipal health department, the departmental health officer has established a central dental clinic for all school



Departments of France having full-time health organizations in 1927.

children in the city of Montpellier. This will be supported by municipal funds.

The departmental health officer was given the necessary authority, effective from January 1, 1927, to secure the collection and analysis of local vital statistics with the aim of developing an effective statistical service.

Seine-et-Marne.—The public health demonstration in the department of Seine-et-Marne has completed its second year of operation. The technical organization of the departmental health service has been accomplished by unifying all health activities and by dividing the department into eighteen nursing districts. As rapidly as possible existing tuberculosis dispensaries are being converted into general health centers. At the end of the year there were eight health centers operating at strategic points in the department. New centers had been opened at Nemours and Montereau while the tuberculosis dispensary at Fontainebleau was remodeled for broader services.

The public health nursing service is of special interest since the program under development represents one of the first attempts to initiate a distinctly rural nursing service in a French department with an extensive rural population. The nursing staff was increased from twelve to seventeen nurses in 1927. Infant clinics rose

from fourteen at the beginning of 1927 to forty-nine at the end of the year. The departmental laboratory installed in the central office at Melun in 1926 has made commendable progress; a branch diagnostic laboratory was established at Meaux.

The departmental health officer is carrying on an active program of health education by circularizing physicians, by popular articles, by distribution of literature, and through informal conferences held by doctors and nurses. He has also prepared a report describing the organization of the demonstration in the department of Seine-et-Marne and its work during the first year of operation. This document was printed by the National Office of Social Hygiene and distributed to all other French departments as a stimulus and guide for similar organizations.

A new method for the collection and analysis of vital statistics was adopted in 1927 with a view to developing a satisfactory statistical service. All reports are forwarded each month to the central office at Melun, and cases in which the cause of death is not properly designated are followed up for more accurate information. Morbidity reports have been more complete during the past year.

The control of infectious diseases, particularly diphtheria, scarlet fever, and measles has been

stressed, and the campaign against tuberculosis has made good progress. The examination of school children is functioning satisfactorily; the number of communes approving school medical inspection was increased from forty-five on October 1, 1925, to 153 on November 1, 1927.

Saône-et-Loire.—The public health demonstration which the Foundation is aiding in the Department of Saône-et-Loire has entered upon its second year. A well-equipped chemical and bacteriological laboratory for the department has been permanently installed in a remodeled building in the city of Macon, which also houses the central office of the departmental health service. A considerable number of laboratory examinations have already been made. All physicians of the department have been informed of the diagnostic facilities offered by this service.

For the first time all vital statistics records are passing through the departmental health office of Macon instead of being sent directly to the national statistical bureau in Paris. This represents a distinctly forward step in the development of an efficient statistical service and should also bring about closer cooperation on the part of the medical profession in specifying more exactly the causes of death.

To extend the health campaigns which have been restricted heretofore to the larger towns and

cities, a program of popular health education has been prepared for the villages. The reorganization of the service of sanitary inspection has developed satisfactorily. Three public health nurses continued their work in the districts of Macon, Autun, and Chalons-sur-Saône. Visiting nurse service was also extended to schools in these districts.

Aisne.—In the department of Aisne the public health demonstration which was started during 1927 will continue for a three-year period. This department is situated in the northern part of France and has a population of approximately four hundred and eighty-nine thousand. It is predominantly rural, with only eight towns having a population above five thousand and but one town with over twenty thousand inhabitants. The department ranks high in wealth and material resources; land is rich and productive; agriculture is the chief occupation, although there is some manufacturing. Reconstruction of the enormous amount of property destroyed during the war is practically completed. Present living conditions are generally superior to those prevailing before the war.

In 1927 the efforts of the health demonstration were centered in the arrondissement of Laon. Adequate transportation facilities were provided for the medical and nursing personnel, thus

permitting the extension of necessary public health work to hitherto neglected rural communities. The tuberculosis dispensary is being converted into a general health center. The new departmental diagnostic laboratory was installed at the hospital in Laon. There has been a constant increase in the volume of work and the number of practising physicians who have utilized the diagnostic facilities.

A general nursing service is being organized for the department, and work is being initiated in the arrondissement of Laon. The nurses aid the assistant health officer with his consultations at the health center and during school medical inspection, undertake home visits, and cooperate with the sanitary inspectors. Seventeen public health nurses are now employed in the department, an increase of eight nurses in 1927. Outside the arrondissement of Laon their duties have consisted chiefly of assisting physicians at the tuberculosis and venereal disease dispensaries and making home visits to tuberculosis patients.

In the reorganization of the present service for the control of communicable diseases, which employs seven full-time sanitary inspectors, efforts have been directed chiefly toward replacing the existing system of terminal fumigation with concurrent disinfection. Diphtheria control is being extended. To improve the service



A small health station in Southern Yugoslavia, established with Foundation aid.

Health center, Dandowka, Bendzin District, Poland, one of the areas in which the Foundation is assisting the Government in organizing public health work.



Waiting-room, Dandowka health center.



Medical examination of school children, Hartberg District, Austria.



A primitive well in rural Czechoslovakia.

of vital statistics, particularly with regard to the accuracy of causes of death, all mortality records as well as morbidity reports will now be sent directly to the office of the departmental health officer for tabulation and analysis.

Tarn-et-Garonne.—The cooperation of the Foundation was extended to the Department of Tarn-et-Garonne in the operation of a public health demonstration over a five-year period beginning January 1, 1927. This department is situated in the southwestern part of France and is one of the smaller departments from the standpoint both of area and of population, the latter numbering about one hundred and sixty thousand. The inhabitants are essentially rural; agriculture is the chief occupation and the land is held principally by small owners. The general death-rate is somewhat lower than that for France as a whole when the correction for age is considered; the infant mortality rate is higher than that prevailing throughout the country.

A central office was established at Montauban. A full-time personnel was appointed consisting of a chief health officer, an assistant health officer, four public health nurses, a chief nurse, one laboratory technician and assistant, one secretary, and a clerk. The first health center was opened at Montauban in October, in spacious and attractively remodeled quarters in a public building.

A radiologist and two specialists for eye, nose, and throat work serve on a part-time basis at this center. A program of general health work is being developed. A second health center at Moissac was nearing completion at the close of the year. A departmental diagnostic laboratory began to function in the fall. Prior to the opening of the health center at Montauban the chief health officer traveled about the department establishing personal contacts with physicians and local authorities who were thoroughly informed as to the proposed development of modern health work.

The chief problem in the initial development of the visiting nurse service was to secure direct contact with the homes. This was accomplished by follow-up work among school children and by home visiting to cases enrolled at the health center consultations. It is planned to examine school children once each year. Such service began to function in the fall of 1927, and by the end of the year approximately four thousand pupils had been examined by the full-time officers.

Popular Support of Rural Health Work in Austria

The health demonstration in the district of Hartberg, which the Foundation is assisting, has completed two and one-half years of work.

During the past year three new health centers have been organized, making a total of five now in operation. Infant welfare clinics had a total registration of 1,810 cases to whom the public health nurses made 3,646 visits. School hygiene was extended in the district, and during the school year 1926-1927 more than 1,100 school children were examined. More than 70 per cent of the physicians practising in the district are identified with some phase of the work.

The public health nurses are natives of the district and realize its problems and possibilities. To provide further nursing instruction, three nurses' conferences were held in Hartberg, which is now used for the practical training of public health nurses from other districts. During the year, four-day conferences for midwives were held at the various health centers.

There are eleven local committees for public health education in the district which cooperate with the health centers in an active campaign. Physicians associated with the demonstration gave several lectures to stimulate interest in public health activities and also prepared popular articles for the press.

Two District Health Demonstrations in Czechoslovakia

The Foundation is assisting two rural health demonstrations in Czechoslovakia, one in the

district of Holesov and the other in the district of Vrsovice in greater Prague; collaboration is to continue over a five-year period. A Foundation representative is available as adviser in rural health problems and in health demonstrations entirely supported by the Government.

In May, 1927, work was undertaken in the district of Holesov, which is located in the eastern part of the province of Moravia and covers an area of 300 square miles. The district has a population of approximately seventy-six thousand and is largely agricultural. There are three small cities, the largest of which is Holesov.

Prior to the demonstration, the health personnel of the district consisted of a district health officer and twelve community physicians, all on a part-time basis and paid by the Central Government. The district health officer is now employed on a full-time basis, as are also two public health nurses. Of the twelve community physicians who are on a part-time basis, four serve at the health centers. The Central Government, the villages, the towns, and private health agencies are contributing toward the budget of the demonstration. Four health centers have been opened and will serve as bases for field work in the outlying districts, particularly in the mountains. Their activities in 1927 consisted of anti-tuberculosis work, maternal and infant welfare,

and school hygiene which has been stressed since the beginning of the demonstration. All schools in the district have been visited and approximately thirty-seven hundred pupils have been examined; informal talks have been given and health pamphlets distributed. A school dental dispensary operated in the town of Holesov.

The district of Vrsovice, in which a public health demonstration was initiated in the fall of 1927, is located in the periphery of the greater city of Prague and includes a population of approximately forty-six thousand. Both urban and rural health problems exist in the district, for although it is for the most part rural, it has two small urban areas.

The early months of the demonstration were occupied chiefly with the establishment of a central health office and the creation of a public health nursing service. The health personnel employed in the district prior to the demonstration were formed into a working unit, and at the close of the year the staff included one district health officer, five assistant district health officers or community physicians, seven part-time health officers for work in various dispensaries, eight public health nurses, five clerks, and one sanitary inspector. The work of all private health agencies has been unified for broader and more effective service. An intensive

educational campaign was initiated to stimulate popular interest in the program of the demonstration. In the month of November alone, approximately seven thousand persons were reached by means of public meetings, illustrated lectures, and talks to school children. The health organization that is being developed in this district will serve as the model in the proposed reorganization of the public health service of the city of Prague.

A Well-Developed Rural Health Program in Yugoslavia

In 1926, at the invitation of the Government of Yugoslavia, a member of the Foundation field staff made a survey of public health conditions in the southern part of the country in the sections known as Macedonia and eastern Montenegro. Constructive public health work is well under way in these provinces and significant progress has already been made in the development of a rural health organization admirably adapted to meet the needs of the people. To extend these activities, the Foundation has contributed toward the construction, equipment, and first year's maintenance of eight school health centers and six branch health stations. The reduction of communicable diseases and the development of school hygiene have been emphasized at these community centers. Antimalaria measures are

being extended; antituberculosis work and maternal and infant hygiene have been initiated.

A representative of the Foundation was invited to make a survey of the public health situation in Bosnia and Herzegovina in 1927. Subsequently the Foundation voted to assist the Government in the organization of a rural health demonstration in these provinces.

Hungary Organizes a Rural Health Service

A rural health demonstration was started in the district of Gödöllő, Hungary, in 1927. Besides the district health officer, the staff included three public health nurses, one sanitary inspector, and a clerk. The reduction of communicable diseases was stressed. Practically all school children in the district, numbering about ten thousand, were examined for trachoma. A tuberculosis dispensary was organized and equipped, and a survey was undertaken by a public health nurse who had received special training in this field under a Foundation fellowship. Closer supervision of food supplies has been secured.

School hygiene was extended in the district. Late in the year there was installed a school dental clinic which received aid from the ministries of Public Welfare and Public Instruction and the town of Gödöllő. The demonstration

is cooperating with the Stephania Association which supervises maternal and infant welfare work in Hungary. In 1927 the number of stations in the district supported by this agency was increased from five to nine. Lectures relating to tuberculosis, general sanitation, and maternal and infant hygiene were given in every village in the district by the Red Cross and the section of health education in the Ministry of Public Welfare. The construction of a new health center in the town of Gödöllő was begun on a site provided by the town; the cost of the building will be assumed by the Ministry.

Success of District Health Work in Ceylon

The health organization in the Kalutara district of Ceylon continued to function throughout the year. The Government also voted funds to provide two additional health organizations, one of which was established in the Kurungala district in North Western Province late in 1927. This type of work is now well established and seems to meet the needs of the people of Ceylon.

Four health centers operated in the Kalutara district during the year, two in urban areas and two in rural sections. At one of these, Koholana, established in 1926, the first model child welfare and maternity center in Ceylon was opened in December, 1927. The site, building,

and equipment were provided by public-spirited residents of the community. At Kalamulla a new station was inaugurated to serve a rural area. Milk stations were conducted in conjunction with all centers, and some progress was made in securing safe milk supplies for the district.

The scope of activities of the health organization has been extended, and attendance at the



Rural health stations and school health centers of Southern Yugoslavia (Macedonia), operated with the aid of the Foundation.

clinics has shown a wholesome increase. An outstanding feature of the work has been the development of activities to reduce the high maternal and infant mortality. During the past year 582 mothers and 448 infants were registered at the health centers, and nurses made 3,231 home visits in their interests. Preschool children received special care, and more than 1,300 home visits were made to 219 young children enrolled. Medical inspection of all school children in the district was completed.

Intensive health education was associated with all activities undertaken. A special course of lectures was given to teachers in the district by the medical officer of the organization. Elementary instruction in personal hygiene, housing, refuse disposal, and conservancy was prepared for the village headmen. At the conclusion of the course certificates of proficiency were awarded. Illustrated lectures, informal talks to school children, distribution of health pamphlets and personal conferences were utilized. The health survey was completed in March. An intensive hookworm campaign was undertaken and treatments were administered to practically 10 per cent of the population. Latrine construction has been stimulated. General sanitation in the district as a whole has improved since the establishment of the health organization. The reporting of morbidity and mortality statistics has shown improvement.

Rural Health Organization Extended in Straits Settlements

In conjunction with the rural sanitation campaign in the Straits Settlements, a Foundation representative continued to assist in developing rural health work through the organization of district health centers. In 1927 the health organization at Jasin in Malacca continued its

activities and five new centers were established by the Government, so that by the end of the year two were operating in Malacca, two in Singapore, one on the island of Penang, and one in Province Wellesley. In organization and scope these centers are similar to the Jasin center discussed in the annual report of the Foundation for 1926. The program that is being developed in the districts is apparently well suited to local conditions.



Areas in the Straits Settlements where district health centers have been established.

Child welfare clinics have proved highly successful; mothers of the various races bring their babies to the health centers for treatment and advice. Health lectures have attracted more than 8,200 persons; 5,539 persons have sought help at the centers; approximately 13,000 home visits have been made by the public health nurses; 3,320 treatments for intestinal parasites have been administered. A public health survey was made of the Tanjong Tokong area in Penang.

The cosmopolitan character of the population of the Straits Settlements has made the program of public health education very difficult; the five races making up the bulk of the population employ over twenty different languages or dialects. Charts, moving pictures, and posters, have been largely used. Permanent health exhibits are maintained at the district health centers. Health poster contests and health education contests were organized in the schools of Penang.

Progress of Organized Health Work in Siam

In Siam a program of intensive health work was continued in the municipality of Lopburi by a special unit of the sanitary campaign division of the Department of Public Health. Efforts are being directed chiefly toward the improvement of sanitary conditions. The work already accomplished in the district has made some contribution to the progress of local health administration in Siam, which is being carefully studied. Three municipalities, one of which was Lopburi, were surveyed by the Government during the year to ascertain the public health problems of each and to recommend the inauguration of such public health measures as are economically feasible.

Maternal and infant welfare activities made good progress; prenatal care was emphasized.



GO, GATHER
THEM IN.

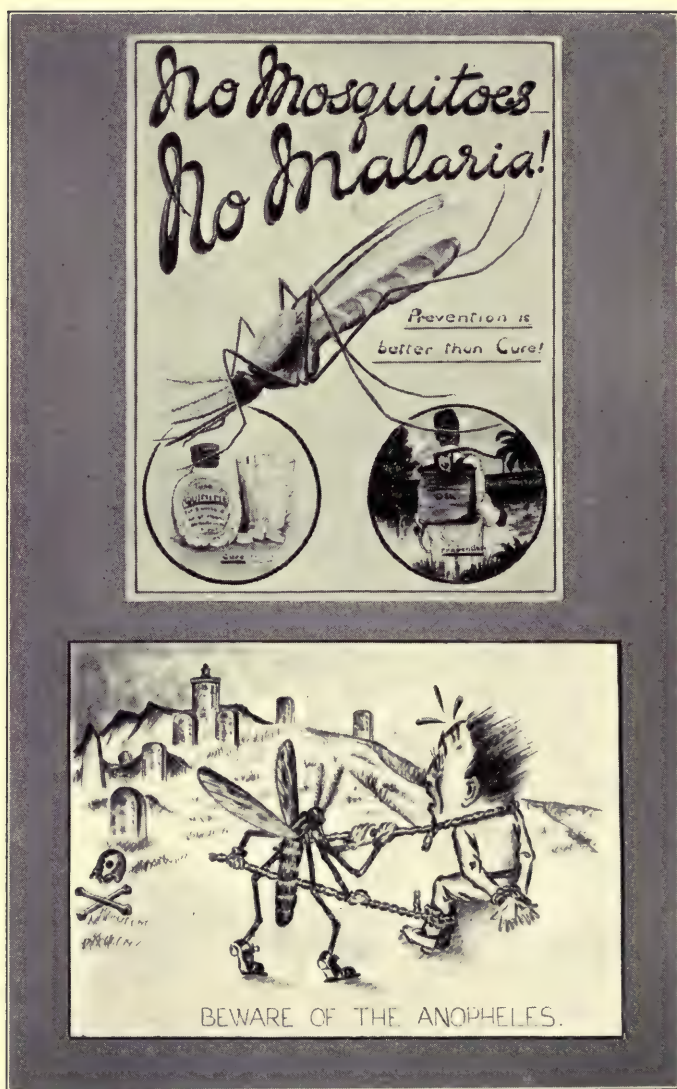
THE HOOK-WORM'S
CAN'T BITE



FOUR TEETH
THROUGH
THESE



Posters made by children of Penang, Straits Settlements, for the school health poster contest.



Two other entries in the Penang health poster contest.

The midwife-nurse attended eighty-five births, made two hundred and thirty-four home visits, and held more than two hundred office consultations.

Besides the regular staff of the Sanitary Division there is a small group of hookworm dispensers, supervised by the unit director, which has undertaken soil pollution abatement in adjacent areas. In the government schools in Lopburi hygiene is taught in every grade and medical inspection has been initiated.

Local Health Work in China

In China a Foundation representative continued to advise in the administration and operation of the Health Station in Peking and served in a similar capacity to the Health Department of the Metropolitan Area in that city. He also assisted various national groups in Shanghai, Canton, Hankow, and Hangchow in developing municipal health administrations suitable to Chinese conditions and advised local authorities in the province of Shansi in the organization of a provincial health department.

Rural Health Demonstration in India

As a means of introducing a general health program in the Madura district of the Madras Presidency, India, measures for dealing with the

outstanding problem, that of sanitation, were undertaken. A demonstration in rural sanitation which was begun in 1926 was continued and considerably extended during the past year. An active program of health education was conducted by means of illustrated lectures, school talks, personal conferences, and distribution of health literature. Approximately fifty-nine thousand persons attended the lectures and conferences, which dealt with hookworm disease, soil pollution, village sanitation, personal hygiene, and water-supplies.

VIII

The Health Organization of the League of Nations

Collaboration with the Health Organization of the League of Nations was continued through the contribution of funds toward international interchanges of public health personnel and the further development of a world-wide service of epidemiological intelligence and public health statistics.

In 1927 the plan of interchanges was broadened to include the organization of two international courses of advanced training in public health and hygiene. The first of these was held in Paris at the Institute of Hygiene of the Faculty of Medicine with twenty-six officers from fifteen health administrations in attendance. The first part of the program included lectures and visits in Paris

and the vicinity to study the practical application of various health measures. During the second part of the course, each of the participants visited two or three countries for the study of problems of outstanding importance.

Nineteen medical officers representing fourteen countries convened in London in November, 1927, for the second course of this type. The program of work included lectures and practical studies of public health institutions and organizations.

Two regular interchanges of health personnel were held in 1927, one in Great Britain and the other in Germany. Twelve officials from the health administrations of ten countries participated in the former; while the latter, the first international interchange to be held in Germany, brought together twenty-five health officers from twenty-one countries. After a preliminary period spent in studying the federal public health services, visits were made to several large towns, a mining area, watering places, and small communities. Twelve persons from six countries received subsidies for special studies.

The epidemiological and public health intelligence service continued work along the lines described in previous annual reports of the Foundation. In February, 1927, the Foundation renewed for a period of seven years, beginning in

1928, its agreement with this service to promote special activities relating to the advancement and unification of vital and public health statistics. Annual contributions will be made on a decreasing scale.

In order to secure greater uniformity in statistical procedure, a commission of expert statisticians was appointed late in 1926 to consult with various governments about the contemplated revision of the international list of causes of death. The first meeting of this group was held in March, 1927.

A conference on methods of collection, transmission, and publication of epidemiological intelligence on an international scale was held at Geneva. Recommendations were offered for the improvement of the system now in operation.

The epidemiological work of the Eastern Bureau at Singapore continued to expand; by the end of the year 140 ports were furnishing current information on the prevalence of important communicable diseases. Thirty-five health administrations in the Far East have agreed to notify the bureau of the arrival at their ports of ships having on board persons with communicable diseases. The new epidemiological sub-center at Melbourne, Australia, provided reports on health conditions in the Austral-Pacific Archipelago. The meetings of the advisory council of

the bureau in 1927 were attended by thirty-one persons representing thirteen national and colonial administrations.

During the year a grant was made by the Foundation to assist over a seven-year period in organizing a center of public health documentation at Geneva. The functions of this center are the collection and dissemination of information regarding public health activities throughout the world.

IX

Field Research in Respiratory Diseases

The Foundation has always maintained the conviction that public health work is essentially a function of government and that private agencies could best be employed in pioneering to aid government organizations to open up new lines of work and to extend the possibilities of their programs.

The development of this policy has resulted in two outstanding contributions toward the prevention of disease and the betterment of the health of nations: (1) assistance to official public health organizations in the development of administrative measures based on scientific knowledge of diseases; and (2) field research in the epidemiology of disease, thus making possible the application of advanced scientific knowledge in the development of an administrative program.

The diseases which have been selected for investigation in the past are of world-wide distribution and of great economic importance. The essential principles of hookworm disease campaigns have now been developed to a point where administrative measures can be applied satisfactorily and economically. The epidemiology of malaria still calls for further investigation, but good progress is being made. It would seem therefore that the time is ripe to initiate a new project—an international field research concerning one of the most important and wide-spread groups of diseases that affect mankind, viz., acute epidemic respiratory diseases.

This group parallels others which have been studied: it is of great economic and social importance; its distribution is world wide; a large mass of uncorrelated data has been collected in many parts of the world; the epidemiology of the diseases is still obscure; no satisfactory administrative procedure has been developed. Thus the unsolved problem is at hand. The solution will be difficult. With our present knowledge and equipment it may prove unsolvable, but the need is unquestioned.

Experience indicates that the method of attack offering the greatest hope of success would be preliminary field research concerning the epidemiology of the diseases. With this idea in

mind a joint program of research has been outlined by the Rockefeller Institute for Medical Research and the International Health Division of the Rockefeller Foundation. Work was started by a field laboratory in the rural districts of southern Alabama in October, 1927. It is planned to carry out a similar line of field studies in isolated sections in temperate, tropical, and cold regions.

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913- Dec. 31, 1920	1921	1922	1923
<i>Grand Total</i>	\$5,986,063.47	\$1,897,174.52	\$9,071,719.05	\$2,824,802.60
GENERAL BUDGET				
Hookworm Disease	2,590,627.88	455,423.45	498,582.94	415,138.41
County Health Work . . .	13,299.50	167,996.90	214,854.79	230,829.08
Malaria	289,858.94	150,291.34	161,455.14	163,400.50
Yellow Fever	332,130.19	236,755.46	211,980.51	334,603.80
Tuberculosis in				
France	1,605,675.96	359,540.31	268,274.49	82,041.52
Public Health Educa-				
tion	143,930.20	96,548.25	140,598.40	200,701.38
Schools of Hygiene				
and Public Health..	86,480.01	24,725.36	20,561.52	7,604.19
Miscellaneous	57,450.19	71,822.89	120,036.88	193,097.19
State Health Services..		16,109.70	74,688.55	109,888.92
Epidemiology				3,687.95
Sanitary Engineering..			1,686.33	7,659.89
Vital Statistics				400.00
Public Health Labora-				
tory Service		16,109.70	26,325.29	32,180.74
Public Health Nursing			14,630.10	25,654.17
Other Services			32,046.83	40,306.17
Public Health Adminis-				
tration	12,708.81	20,736.31	20,554.47	106,660.89
Bureaus of Study and				
Reform of Health				
Activities	12,708.81	20,736.31	5,534.47	7,720.00
Health Section of				
League of Nations..			15,020.00	98,940.89
Field Service				
Expenses not Prorated				
to Specific Budgets	92,271.48	38,936.95	64,781.19	247,734.39*
Miscellaneous	256,465.18	31,256.47	15,605.53	11,065.32
BUILDING, EQUIPMENT, AND ENDOWMENT				
Schools and Institutes of				
Hygiene and Public				
Health	649,095.33	323,579.38	7,400,343.04	922,738.39
Schools of Nursing				
School of Native Medical				
Assistants, Suva, Fiji				

* Includes initial deposit under retirement plan.

1913-1927, Inclusive, Covering All Activities

1924	1925	1926	1927	Total
\$2,887,730.98	\$3,311,918.21	\$3,583,669.10	\$3,576,242.54	\$33,139,320.47
460,674.93	412,312.07	353,701.75	322,902.56	5,509,363.99
236,507.33	234,777.91	265,129.71	362,003.54	1,725,398.76
195,120.63	203,808.19	253,948.79	288,088.20	1,705,971.73
639,063.50	545,626.37	591,137.91	460,728.99	3,352,026.73
67,093.60	11,647.61	.....	.....	2,394,273.49
253,790.40	301,031.09	372,804.69	387,849.15	1,897,253.56
30,167.35	27,052.94	24,968.20	18,118.13	239,677.70
223,623.05	273,978.15	347,836.49	369,731.02	1,657,575.86
97,976.79	132,596.88	101,158.29	138,967.82	671,386.95
5,529.62	9,776.92	10,193.97	16,383.05	45,571.51
4,032.74	4,225.00	5,374.33	19,197.78	42,176.27
1,706.66	4,938.09	11,447.75	10,913.23	29,405.73
41,767.89	49,867.98	45,901.30	40,146.75	252,299.65
22,701.51	52,236.15	21,010.29	24,558.12	160,790.34
22,238.37	11,552.74	7,230.65	27,768.69	141,143.45
169,120.60	195,545.89	159,324.67	14,567.50	699,219.14
17,720.00	32,540.99	20,029.66	14,520.87	131,511.11
151,400.60	163,004.90	139,295.01	46.63	567,708.03
121,101.32	157.662.13	183,319.68	58,249.73	964,056.87
10,171.07	9,905.54	10,418.44	19,666.32	364,553.87
637,110.81	1,107,004.53	1,262,514.32	1,414,262.06	13,716,647.86
.....	.....	30,210.85	99,296.67	129,507.52
.....	.....	.....	9,660.00	9,660.00

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913- Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
Hookworm Disease....	\$2,590,627.88	\$455,423.45	\$498,582.94	\$415,138.41
United States *.....	524,740.65	15,730.39	7,510.26	5,960.29
Alabama.....	34,041.84	.....	.....	25.00
Arkansas.....	5,247.00	.....	.....	.....
Georgia.....	39,808.09	.....	.....	.....
Kentucky.....	37,475.52	.....	.....	.....
Louisiana.....	6,309.34	.....	.....	.....
Mississippi.....	75,639.72	.....	.....	.....
North Carolina.....	55,020.97	.....	.....	.....
South Carolina.....	65,318.91	.....	.....	.....
Tennessee.....	54,649.32	.....	.....	.....
Texas.....	69,784.43	.....	.....	.....
Virginia.....	51,289.28	.....	.....	.....
Administration....	25,359.31	.....	.....	.....
County Dispensary work in the South	4,796.92	.....	.....	.....
Resurveys.....	.....	15,730.39	7,510.26	5,935.29
West Indies.....	435,652.30	85,541.60	110,039.59	116,828.44
Antigua.....	19,593.84	.....	2,552.67	.....
Barbados (survey)..	1,651.31	.....	.....	.....
British Guiana †...	87,771.86	1,281.02	248.37	.....
Cayman Islands (survey).....	1,795.16	.....	.....	.....
Dominica (survey)	.....	.....	.....	89.32
Dutch Guiana †....	39,674.47	12,917.66	17,786.64	19,416.68
Grenada.....	37,364.32	.....	.....	.....
Haiti.....	.....	.....	.....	.....
Jamaica.....	32,170.42	16,949.24	23,241.56	21,280.54
Montserrat-Nevis (survey).....	.....	.....	.....	.....
Porto Rico.....	7,823.35	18,290.86	28,450.98	30,395.06
Santo Domingo (survey).....	1,077.07	.....	.....	.....
St. Kitts (survey)..	.....	.....	.....	1,989.24
St. Lucia.....	51,658.03	8,545.88	9,378.80	9,182.04
St. Vincent.....	31,761.76	.....	.....	.....
Tobago (survey)...	1,072.22	.....	.....	.....
Trinidad.....	86,817.76	17,489.50	17,590.83	23,460.87
Administration....	35,420.73	10,067.44	10,789.74	11,014.69
Central America.....	582,966.68	83,920.99	86,922.83	90,714.46
British Honduras (survey).....	4,273.47	.....	.....	.....
Costa Rica.....	126,983.81	14,061.92	6,355.05	4,979.63
Guatemala.....	93,356.66	15,362.58	18,467.99	16,246.60

* In September, 1917, the hookworm work in the Southern States began to be absorbed into the longer in some states than in others, it was not possible to announce until the end of 1920 that in all responsibility for all efforts directed toward the relief and control of hookworm and other soil-borne

† For administrative reasons British and Dutch Guiana, although on the mainland of South America,

INTERNATIONAL HEALTH DIVISION

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1913-1927, Inclusive, Covering All Activities—Continued

1924	1925	1926	1927	Total
\$460,674.93	\$412,312.07	\$353,701.75	\$322,902.56	\$5,509,363.99
197.01	25.00	.....	.....	554,163.60
.....	25.00	.....	.....	34,091.84
.....	.....	.....	.....	5,247.00
197.01	.....	.....	.....	40,005.10
.....	.....	.....	.....	37,475.52
.....	.....	.....	.....	6,309.34
.....	.....	.....	.....	75,639.72
.....	.....	.....	.....	55,020.97
.....	.....	.....	.....	65,318.91
.....	.....	.....	.....	54,649.32
.....	.....	.....	.....	69,784.43
.....	.....	.....	.....	51,289.28
.....	.....	.....	.....	25,359.31
.....	.....	.....	.....	4,796.92
.....	.....	.....	.....	29,175.94
132,230.12	99,274.42	49,211.72	40,457.20	1,069,235.39
.....	.....	.....	.....	22,146.51
.....	.....	.....	.....	1,651.31
.....	.....	.....	.....	89,301.25
.....	.....	.....	.....	1,795.16
2,659.78	.....	.....	.....	2,749.10
.....	.....	.....	.....	89,795.45
.....	.....	.....	.....	37,364.32
10,762.12	18,605.84	.....	.....	29,367.96
27,742.83	36,056.49	26,983.36	19,312.94	203,737.38
511.06	173.28	.....	.....	684.34
36,417.62	33,311.12	11,114.76	11,944.57	177,748.32
.....	.....	.....	.....	1,077.07
2,624.67	.....	.....	.....	4,613.91
11,625.68	.....	.....	.....	90,390.43
.....	.....	.....	.....	31,761.76
.....	.....	.....	.....	1,072.22
29,200.94	.....	.....	.....	174,559.90
10,685.42	11,127.69	11,113.60	9,199.69	109,419.00
81,299.80	54,147.75	36,652.93	38,304.88	1,054,930.32
.....	.....	.....	.....	4,273.47
4,877.16	9,875.42	759.03	.....	167,892.02
16,532.26	15,820.13	6,796.56	9,421.62	192,004.40

programs of the rapidly developing county departments of health. The period of transition being the states the county health departments would henceforth assume, as one of their regular functions, diseases.

are listed with the West Indies.

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913- Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
Hookworm Disease				
<i>Continued</i>				
Central America—				
<i>Cont'd.</i>				
Honduras.....	\$.....	\$.....	\$10,802.41	\$14,286.73
Nicaragua.....	113,135.70	21,479.43	15,790.55	12,980.46
Panama.....	137,858.28	23,496.22	18,675.03	29,407.59
Salvador.....	81,718.79	3,520.84	8,283.79	5,271.68
Administration....	25,639.97	6,000.00	8,548.01	7,541.77
Mexico.....	.....	.....	.....	.....
South America.....	509,162.01	148,358.94	169,885.69	69,597.17
Brazil.....	494,111.26	129,723.97	148,189.38	45,827.49
Colombia.....	15,050.75	18,634.97	21,696.31	22,217.48
Paraguay.....	.....	.....	.....	1,552.20
Venezuela.....	.....	.....	.....	.....
Europe.....	.....	.....	.....	.....
Spain.....	.....	.....	.....	.....
The East.....	510,312.48	115,805.46	116,718.54	101,717.15
Uncinariasis Com-				
mission to Orient	51,483.31	.....	.....	.....
Australia.....	74,028.70	39,912.29	35,375.57	33,745.09
British North				
Borneo.....	3,106.23	7,440.10	5,641.00	3,101.75
British Solomon Is-				
lands (survey)....	.....	1,378.85	225.60	.....
Ceylon.....	156,317.50	23,689.34	15,041.57	9,252.78
China.....	28,570.03	.....	.....	.....
Egypt.....	26,074.78	.....	.....	Cr.8,952.64
Fiji Islands.....	14,743.13	498.64	10,653.55	7,431.02
India.....	7,810.00	12,496.30	9,883.53	10,275.40
Java.....	327.66	.....	.....	.....
Mauritius.....	5,688.56	.....	7,356.43	12,235.10
Sarawak.....	.....	.....	.....	.....
Seychelles Islands..	32,956.03	.....	.....	.....
Siam.....	49,012.93	18,429.18	23,993.28	27,086.88
South Sea Islands..	.....	.....	.....	.....
Straits Settlements..	.....	.....	.....	.....
Administration....	60,193.62	11,960.76	8,548.01	7,541.77
Miscellaneous.....	27,793.76	6,066.07	7,506.03	30,320.90
Field Studies				
Alabama.....	14,524.06
Brazil.....	1,006.35	220.96

INTERNATIONAL HEALTH DIVISION

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1913-1927, Inclusive, Covering All Activities—Continued

1924	1925	1926	1927	Total
\$12,902.91	\$.....	\$.....	\$.....	\$ 37,992.05
12,017.01			5,211.18	180,614.33
26,938.47	22,398.17	21,128.74	17,329.58	297,232.08
.....	.....	.....	.....	98,795.10
8,031.99	6,054.03	7,968.60	6,342.50	76,126.87
36,284.08	30,525.22	24,457.28	15,432.14	106,698.72
79,793.56	78,048.90	76,341.35	69,354.72	1,200,542.34
47,338.46	24,134.26	.....	.....	889,324.82
16,241.47	27,575.99	43,956.49	39,869.25	205,242.71
16,213.63	26,338.65	32,384.86	21,651.18	98,140.52
.....	.....	.....	7,834.29	7,834.29
4,012.42	14,260.57	1,500.88	3,847.88	23,621.75
4,012.42	14,260.57	1,500.88	3,847.88	23,621.75
104,950.55	120,115.02	132,275.93	118,631.98	1,320,527.11
.....	.....	.....	.....	51,483.31
18,710.79	.....	.....	.....	201,772.44
.....	.....	.....	.....	19,289.08
.....	.....	.....	.....	1,604.45
7,520.64	16,639.14	13,610.22	4,873.96	246,945.15
.....	.....	.....	.....	28,570.03
.....	.....	.....	.....	17,122.14
7,282.03	201.37	6,571.49	.....	47,381.23
8,307.39	20,140.47	15,647.83	21,082.84	105,643.76
22,752.97	21,446.09	22,031.82	21,709.25	88,267.79
3,987.01	Cr.90.16	.....	.....	29,176.94
.....	.....	.....	10,083.19	10,083.19
.....	487.82	229.38	.....	33,673.23
25,844.05	26,671.78	45,834.11	23,231.90	240,104.11
2,513.68	2,874.19	.....	10,062.68	15,450.55
.....	19,980.01	20,382.49	21,245.66	61,608.16
8,031.99	11,764.31	7,968.59	6,342.50	122,351.55
21,907.39	15,915.19	33,261.66	36,873.76	179,644.76
4,869.46	4,784.17	7,630.34	5,802.76	37,610.79
.....	.....	.....	.....	1,227.31

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913– Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
Hookworm Disease				
<i>Continued</i>				
Miscellaneous— <i>Cont'd</i>				
Field studies				
Ceylon.....	\$.....	\$.....	\$ 356.35	\$ 85.09
Egypt.....	.....	.....	.....	.....
Research in life history of hookworm eggs and larvae..	.....	3,618.33	5,358.26	7,434.94
Thymol.....	15,476.21	.....	.....	.....
Research in carbon tetrachloride....	.....	.....	.....	9,455.85
Study of methods of diagnosing hookworm disease....	43.95	500.00	758.57	.....
Conferences of health officers....	7,552.87	.....	.....	.....
Motion picture film..	2,817.73	1,584.74	.....	.....
Salvador:				
Portable house and office.....	1,496.54	.....	26.50	<i>Cr.1,400.00</i>
Loss from earthquake.....	406.46	.....	.....	.....
Dutch Guiana, care and storage of motor boat.....	.....	363.00	.....	.....
Study of hookworm in the pig.....	.....	.....	.....	.....
COUNTY HEALTH WORK	13,299.50	167,996.90	214,854.79	230,829.08
United States				
Alabama.....	.....	18,231.35	21,915.97	19,966.46
Arkansas.....	.....	.....	.....	.....
California.....	.....	.....	607.22	6,250.00
Colorado.....	.....	.....	.....	.....
Florida.....	.....	237.75	772.08	.....
Georgia.....	.....	4,338.17	2,790.68	1,537.72
Illinois.....	.....	.....	1,927.94	1,849.99
Indiana.....	.....	.....	1,641.66	2,250.00
Iowa.....	.....	.....	954.18	181.33
Kansas.....	4,494.00	6,316.99	13,095.38	7,349.13
Kentucky.....	.....	16,316.41	16,057.84	16,802.48
Louisiana.....	.....	5,618.28	15,397.64	14,184.73
Maryland.....	4,941.73	1,815.36	7,168.18	3,720.00
Minnesota.....	.....	.....	.....	2,585.53
Mississippi.....	.....	15,652.72	11,713.47	20,238.91
Missouri.....	.....	600.00	9,391.41	9,575.00
New Mexico.....	.....	10,837.52	8,510.73	6,879.86

*Reports incomplete.

1913-1927, Inclusive, Covering All Activities—Continued

1924	1925	1926	1927	Total
\$.....	\$.....	\$.....	\$.....	\$ 441.44
.....	.....	.....	5,234.29	5,234.29
10,634.98	9,231.02	21,234.26	7,876.34	65,388.13
.....	.....	.....	.....	15,476.21
5,852.36	1,900.00	4,288.57	17,928.96	39,425.74
.....	.....	.....	.....	1,302.52
.....	.....	.....	.....	7,552.87
34.66	.....	108.49	31.41	4,577.03
.....	.....	.....	.....	123.04
.....	.....	.....	.....	406.46
.....	.....	.....	.....	363.00
515.93	.....	.....	.....	515.93
236,507.33	234,777.91	265,129.71	362,003.54	1,725,398.76
10,580.09	6,111.06	8,276.84	5,969.07	91,050.84
.....	667.55	2,367.78	2,038.45	5,073.78
7,187.49	7,500.00	5,249.98	6,291.67	33,086.36
.....	1,875.00	2,500.00	2,000.00	6,375.00
750.00	.....	.....	.....	1,759.83
1,588.63	1,518.08	3,447.57	3,961.03	19,181.88
1,725.00	1,650.00	750.00	.....	7,902.93
.....	.....	.....	.....	3,891.66
2,361.76	1,625.90	3,600.00	3,100.00	11,823.17
6,648.29	2,908.36	3,747.28	2,525.00	47,084.43
15,631.73	11,321.01	11,710.60	11,297.64*	99,137.71
10,984.34	6,009.57	5,499.61	7,464.69	65,158.86
.....	.....	.....	.....	17,645.27
2,789.44	625.00	.....	.....	5,999.97
12,252.91	11,081.99	8,256.25	13,389.00*	92,585.25
7,350.00	5,155.00	7,322.13	5,195.00	44,588.54
11,240.19	6,516.00	5,691.68	3,179.06	52,855.04

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913- Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
County Health Work— <i>Continued</i>				
United States— <i>Cont'd</i>				
North Carolina	\$957.04	\$14,413.38	\$7,169.78	\$9,041.86
Oklahoma				
Oregon			4,441.17	6,138.42
South Carolina		17,651.97	12,302.18	13,929.78
South Dakota				
Tennessee		14,686.42	14,421.51	10,950.54
Texas		12,944.58	13,765.55	11,386.40
Utah				
Virginia		13,972.74	11,319.44	11,710.39
Washington				
West Virginia	2,906.73	4,164.56	5,089.15	8,223.28
Wyoming				399.75
Administration		10,198.70	12,887.71	14,316.45
Mississippi Flood Area				
Arkansas				
Kentucky				
Louisiana				
Mississippi				
Missouri				
Tennessee				
Training Station				
Administration				
Flood Area				
Foreign				
Canada			9,000.00	20,652.83
Europe				
Austria				
Bulgaria				
Czechoslovakia				
France				
Hungary				
Poland				
Yugoslavia				
Porto Rico				
South America				
Brazil			12,513.92	10,708.24
Philippine Islands				
Ceylon				
Administration				

* Reports incomplete.

1913-1927, Inclusive, Covering All Activities—Continued

1924	1925	1926	1927	Total
\$10,836.22	\$8,981.33	\$5,604.96*	\$3,625.51	\$60,630.08
3,283.96	10,782.94	12,995.48	11,786.18	38,848.56
8,116.42	10,307.79	9,396.77	9,077.41	47,477.98
13,489.00	12,848.94	10,191.39	9,802.26*	90,215.52
3,645.82	5,000.00	2,499.98*	1,312.50*	12,458.30
11,507.59	9,126.74	12,555.63	12,565.67	85,814.10
8,636.57	10,514.57	8,793.02	3,245.23	69,285.92
1,066.83	2,262.50*	.....*	.....*	3,329.33
8,687.40	9,456.96	7,943.43	14,583.15	77,673.51
2,500.00	2,291.66	.....	.....	4,791.66
8,606.13	9,719.05	9,819.24	15,258.61	63,786.75
2,462.51	2,498.63	922.54	856.80	7,140.23
18,918.77	21,440.35	20,752.87	17,902.43	116,417.28
.....	.....	.....	7,277.10*	7,277.10
.....	.....	.....	6,404.93*	6,404.93
.....	.....	.....	6,623.11*	6,623.11
.....	.....	.....	6,489.55*	6,489.55
.....	.....	.....	1,354.86*	1,354.86
.....	.....	.....	1,573.50*	1,573.50
.....	.....	.....	42,091.49	42,091.49
.....	.....	.....	4,854.82	4,854.82
24,347.17	.....	6,685.36	9,833.34*	70,518.70
.....	2,823.85	4,678.31	4,136.98	11,639.14
.....	.....	.....	1,503.83	1,503.83
.....	.....	297.62	.....*	297.62
.....	3,441.75	11,858.22	10,145.77*	25,445.74
.....	.....	498.52	1,000.00	1,498.52
.....	14,060.48	12,687.06	6,836.34*	33,583.88
.....	.....	.....	14,000.00	14,000.00
.....	.....	5,157.80	4,495.10	9,652.90
19,313.07	29,240.11	53,371.79	47,600.51	172,747.64
.....	5,415.74	.....	50.02	5,465.76
.....	.....	.....	2,582.21	2,582.21
.....	.....	.....	16,723.72	16,723.72

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913- Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
Malaria Control.....	\$289,858.94	\$150,291.34	\$161,455.14	\$163,400.50
Cooperative Demon- strations.....	277,290.11	112,807.97	94,015.02	79,280.50
United States:				
Alabama.....	8,906.92	7,650.06	15,416.93	8,232.07
Arkansas.....	40,684.39	4,777.15	6,388.11	4,274.13
California.....	.....	.....	3,111.12	.....
Florida.....	.....	.....	.....	.....
Georgia.....	1,230.86	.....	2,017.08	3,756.74
Illinois.....	.....	.....	422.80	1,006.84
Louisiana.....	30,699.94	23,095.51	17,365.78	4,519.76
Mississippi.....	149,539.81	21,185.61	8,901.06	12,692.71
Missouri.....	.....	1,471.37	2,900.00	3,200.00
North Carolina..	7,526.13	18,416.25	9,046.96	9,292.94
South Carolina..	13,942.74	13,321.90	10,892.31	7,556.95
Tennessee.....	1,969.94	1,512.56	3,659.65	1,963.50
Texas.....	11,472.34	10,347.23	2,307.84	5,213.64
Virginia.....	5,284.84	831.65	6,062.08	8,981.35
Administration, United States..	6,032.20	10,198.68	5,523.30	8,589.87
Foreign				
South America:				
Argentina.....	.....	.....	.....	.....
Brazil.....	.....	.....	.....	.....
Italy.....	.....	.....	.....	.....
Philippines.....	.....	.....	.....	.....
Panama.....	.....	.....	.....	.....
Porto Rico.....	.....	.....	.....	.....
Administration..	.....	.....	.....	.....
Field Studies and Ex- periments.....	10,758.48	37,238.37	67,440.12	77,977.71
United States:				
Alabama.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	15,182.09
Louisiana.....	.....	.....	.....	205.17
Maryland.....	.....	.....	.....	2,447.88
Mississippi.....	.....	.....	.....	156.34
North Carolina..	.....	.....	.....	.....
Foreign:				
Argentina.....	.....	5,661.02	.....	.....
Austria.....	.....	.....	.....	.....
Brazil.....	292.05	.....	22,043.09	20,429.27
Ceylon.....	.....	.....	.....	.....
Ecuador.....	4,595.59	.....	.....	.....
India.....	.....	.....	.....	.....

* Reports incomplete.

1913-1927, *Inclusive, Covering All Activities—Continued*

1924	1925	1926	1927	Total
\$195,120.63	\$203,808.19	\$253,948.79	\$288,088.20	\$1,705,971.73
107,528.50	109,579.79	183,851.56	206,439.71	1,170,793.16
5,936.26	5,239.56	6,306.38	7,540.95	65,229.13
4,263.40	1,954.16	.....	.....	62,341.34
.....	.....	.....	.....	3,111.12
1,125.00	.....	.....	.....	1,125.00
5,298.38	3,634.40	2,841.52	2,755.04	21,534.02
827.68	3,214.92	.....	.....	5,472.24
4,745.81	4,643.77	4,383.12	3,642.04	93,095.73
7,539.29	10,639.39	12,983.13	14,000.24	237,481.24
3,000.00	1,911.67	1,367.75	.....	13,850.79
15,644.96	7,401.41	4,404.42*	6,692.30*	78,425.37
7,196.81	9,035.86	9,700.00	10,800.00	82,446.57
5,516.22	4,541.63	5,978.95	4,108.34	29,250.79
5,007.00	1,151.09	.....	.....	35,499.14
10,251.00	9,818.61	10,349.17	9,445.36	61,024.06
.....	5,907.04	11,410.22	3,218.77	50,880.08
.....	7,944.75	25,655.58	30,878.94	64,479.27
31,176.69	32,541.53	12,606.71	9,062.55	85,387.48
.....	.....	62,952.88	89,675.64	152,628.52
.....	.....	5,094.37	.....	5,094.37
.....	.....	.....	3,471.80	3,471.80
.....	.....	7,817.36	11,147.74	18,965.10
.....	.....	.....	8,189.49	8,189.49
80,530.36	84,410.69	57,487.82	74,573.13	490,416.68
.....	.....	.....	214.31	214.31
19,299.29	9,662.91	.....	.....	44,144.29
.....	.....	.....	.....	205.17
1,432.43	.....	.....	.....	3,880.31
2,719.10	.....	.....	.....	2,875.44
.....	.....	17,637.92*	9,468.82*	27,106.74
.....	.....	.....	.....	5,661.02
2,102.00	2,381.99	.....	.....	4,483.99
.....	.....	.....	.....	42,764.41
.....	.....	.....	4,548.41	4,548.41
.....	.....	.....	.....	4,595.59
.....	.....	.....	4,341.95	4,341.95

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913— Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
Malaria Control—				
<i>Continued</i>				
Field Studies and Experiments— <i>Cont'd</i>				
Italy.....	\$.....	\$.....	\$.....	\$ 127.24
Netherlands.....				
Nicaragua.....	425.66	6,662.51	8,091.00	13,701.47
Palestine.....			7,250.11	10,572.80
Philippine Islands			6,077.50	8,623.03
Porto Rico.....	5,445.18	24,914.84	23,978.42	6,532.42
Spain.....				
Venezuela.....				
Training of Personnel				
France, Corsica..				
Miscellaneous.....	1,810.35	245.00		6,142.29
Conference of malaria workers..	1,810.35	245.00		375.98
Motion picture film.				5,766.31
Johns Hopkins				
School of Hygiene and Public Health				
University of Chicago.....				
Entomological studies in the field...				
YELLOW FEVER CONTROL.....	332,130.19	236,755.46	211,980.51	334,603.80
Yellow Fever Commissions.....	177,579.16			239.97
Brazil.....		461.30	469.68	107,856.91
Colombia and Venezuela*				42,000.47
Countries Bordering on Caribbean Littoral and Amazon Valley.....	4,514.26			6,332.05
Ecuador.....	106,445.73	1,698.06	3,017.05	
Mexico and Central America.....	43,591.04	154,260.47	163,219.91	159,031.85
Peru.....		80,335.63	36,041.68	
Training of Personnel.			3,000.00	8,875.04
Vaccine and Serum...			6,000.00	3,786.06
History of Yellow Fever.....			232.19	6,481.45
West Africa.....				

* Cost of work in Venezuela includes only the expenses of the survey commission.

INTERNATIONAL HEALTH DIVISION

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1913-1927, *Inclusive, Covering All Activities—Continued*

1924	1925	1926	1927	Total
\$15,243.89	\$36,504.93	\$.....	\$.....	\$51,876.06
.....	.....	.....	4,767.86	4,767.86
6,415.05	7,335.47	4,215.02	.....	46,846.18
12,369.77	4,756.34	3,384.48	6,727.54	45,061.04
14,748.52	10,664.91	10,636.20	13,865.31	64,615.47
6,200.31	13,104.14	.....	.....	80,175.31
.....	.....	12,521.67	14,616.01	27,137.68
.....	.....	9,092.53	7,833.43	16,925.96
.....	3,363.52	5,350.59	54.07	8,768.18
7,061.77	<i>6,454.19</i>	<i>7,258.82</i>	7,021.29	<i>34,993.71</i>
.....	.....	.....	.....	2,431.33
4,756.46	.....	.....	.....	10,522.77
2,004.56	3,037.54	4,240.22	4,061.55	13,343.87
.....	772.81	1,725.00	2,496.88	4,994.69
300.75	2,643.84	1,293.60	462.86	4,701.05
<i>639,063.50</i>	<i>545,626.37</i>	<i>591,137.91</i>	460,728.99	<i>3,352,026.73</i>
.....	.....	.....	.....	177,819.13
515,421.42	370,391.59	444,068.97	205,825.73	1,644,495.60
62,252.23	9,723.35	.....	.....	109,235.57
4,123.33	.....	.....	.....	14,969.64
.....	.....	.....	.....	111,160.84
40,922.22	52,767.26	10,305.04	.....	614,827.59
.....	.....	.....	.....	116,377.31
5,000.00	9,256.76	4,147.93	9,389.98	39,669.71
6,000.00	6,000.00	5,867.94	5,119.96	32,773.96
5,344.30	3,941.33	2,250.00	2,326.60	20,575.87
.....	93,546.08	124,498.03	238,066.72	456,110.83

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913- Dec 31, 1920	1921	1922	1923
GENERAL BUDGET				
Tuberculosis in				
France.....	\$1,605,675.96	\$359,540.31	\$268,274.49	\$82,041.52
Inauguration of Work.	18,671.74	.....	.....	.....
Departmental Organi- zation.....	139,364.76	47,281.28	24,044.27	.....
Public Health Visiting	76,191.46	101,473.08	99,525.30	54,759.09
Educational Division..	368,045.56	79,839.90	62,422.55	.....
Medical Division....	746,368.00	40,621.01	.....	.....
Contingent Fund.....	.....	750.00	2,490.94	4,766.70
Postgraduate Tuber- culosis Courses.....	.....	.....	5,044.15	.....
National Committee..	.....	.....	.....	22,515.73
Central Administra- tion.....	257,034.44	89,575.04	74,747.28	.....
PUBLIC HEALTH EDUCA- TION				
Schools of Hygiene and Public Health.....	143,930.20	96,548.25	140,598.40	200,701.38
Maintenance.....	86,480.01	24,725.36	20,561.52	7,604.19
Brazil. São Paulo	86,480.01	24,725.36	20,561.52	5,404.19
England. London.....	.....	.....	.....	.....
Hungary. Budapest	.....	.....	.....	.....
Poland. Warsaw....	.....	.....	.....	2,200.00
Miscellaneous.....	57,450.19	71,822.89	120,036.88	193,097.19
Fellowships.....	54,854.14	60,696.13	114,637.24	186,519.93
Training of health workers.....	2,561.36	11,126.76	5,399.64	6,577.26
Training bases:				
Alabama.....	.....	.....	.....	.....
Ohio.....	.....	.....	.....	.....
Teaching of hygiene in medical schools				
Harvard Medical School.....	.....	.....	.....	.....
Rio de Janeiro Faculty of Med- icine.....	.....	.....	.....	.....
Study of teaching hygiene and pub- lic health in med- ical schools.....	34.69	.....	.....	.....
STATE HEALTH SERVICES				
Epidemiology.....	.....	16,109.70	74,688.55	109,888.92
United States:				3,687.95
Alabama.....	.....	.....	.....	.....
Kansas.....	.....	.....	.....	.....

* Reports incomplete.

1913-1927, *Inclusive, Covering All Activities—Continued*

1924	1925	1926	1927	Total
\$67,093.60	\$11,647.61	\$.....	\$.....	\$2,394,273.49
.....	.....	.....	.....	18,671.74
37,371.65	.....	.....	.....	210,690.31
.....	.....	.....	.....	369,320.58
.....	.....	.....	.....	510,308.01
4,420.94	.....	.....	.....	786,989.01
.....	.....	.....	.....	12,428.58
.....	.....	.....	.....	5,044.15
10,472.28	11,647.61	.....	.....	44,635.62
14,828.73	.....	.....	.....	436,185.49
253,790.40	301,031.09	372,804.69	387,849.15	1,897,253.56
30,167.35	27,052.94	24,968.20	18,118.13	239,677.70
7,613.95	4,044.22	25.95	.....	148,855.20
15,953.40	20,008.72	20,262.25	11,318.13	67,542.50
.....	.....	.....	3,680.00	3,680.00
6,600.00	3,000.00	4,680.00	3,120.00	19,600.00
223,623.05	273,978.15	347,836.49	369,731.02	1,657,575.86
182,427.80	230,028.32	270,174.77	262,663.90	1,362,002.23
36,035.19	25,469.45	48,661.21	85,845.12	221,675.99
5,160.06	18,480.38	11,585.62	6,024.80	41,250.86
.....	.....	.....	6,697.20	6,697.20
.....	.....	5,500.00	8,500.00	14,000.00
.....	.....	11,914.89	.....	11,914.89
.....	.....	.....	.....	34.69
97,976.79	132,596.88	101,158.29	138,967.82	671,386.95
5,529.62	9,776.92	10,193.97	16,383.05	45,571.51
2,229.04	5,049.68	2,277.26*	3,977.77	13,533.75
.....	236.62	406.72	228.96	872.30

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913– Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
State Health Services—				
Continued				
Epidemiology—				
United States—				
Continued				
Mississippi.....	\$.....	\$.....	\$.....	\$.....
Rhode Island....
South Carolina....
South Dakota....
Tennessee.....
Utah.....	151.14
Virginia.....	3,536.81
Conference of Epidemiologists
Foreign:				
Denmark.....
Sanitary Engineering.	1,686.33	7,659.89
United States				
Alabama.....
Colorado.....
Connecticut.....
Idaho.....
Iowa.....	3,495.12
Louisiana.....	457.72
Maine.....
Missouri.....	1,050.00	368.43
Montana.....	927.57
North Dakota....
Oregon.....
Tennessee.....	642.55
Texas.....	1,423.50
Utah.....	636.33	345.00
Foreign:				
Ceylon.....
Panama.....
Venezuela.....
Vital Statistics.....	400.00
United States				
Alabama.....
Arkansas.....
Georgia.....	400.00
Iowa.....
Mississippi.....
Montana.....
Oklahoma.....
Tennessee.....
West Virginia....

* Reports incomplete.

INTERNATIONAL HEALTH DIVISION

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1913-1927, Inclusive, Covering All Activities—Continued

1924	1925	1926	1927	Total
\$.....	\$.....	\$1,819.08	\$3,337.50	\$5,156.58
.....	537.68	1,653.79	854.58	3,046.05
.....	.....	193.75	775.00	968.75
.....	.....	1,142.32	1,275.00	2,417.32
.....	924.33	2,701.05	2,453.23	6,078.61
2,550.58	2,097.65*	.....*	.....	4,799.37
750.00	930.96	.....*	.....	5,217.77
.....	.....	.....	1,340.49	1,340.49
.....	.....	.....	2,140.52	2,140.52
4,032.74	4,225.00	5,374.33	19,197.98	42,176.27
.....	.....	1,447.85	1,334.12	2,781.97
1,200.00	800.00	.....	.....	2,000.00
.....	375.00	.....	.....	375.00
.....	1,600.00	1,578.67	1,600.00	4,778.67
.....	.....	58.33	349.98	3,903.43
.....	.....	.....	.....	457.72
.....	350.00	700.00	350.00	1,400.00
.....	.....	.....	.....	1,418.43
1,855.01	950.00	.....	.....	3,732.58
477.73	.....	.....	.....	477.73
.....	.....	1,214.30	733.10	1,947.40
.....	.....	375.18	1,143.33	2,161.06
.....	.....	.....	.....	1,423.50
500.00	150.00	.....	.....	1,631.33
.....	.....	.....	2,564.60	2,564.60
.....	.....	.....	3,471.79	3,471.79
.....	.....	.....	7,651.06	7,651.06
1,706.66	4,938.09	11,447.75	10,913.23	29,405.73
.....	665.00	847.50	990.00	2,502.50
.....	.....	1,350.00	750.00	2,100.00
.....	.....	.....	.....	400.00
.....	.....	2,100.00	1,500.00	3,600.00
.....	700.00	882.38	2,204.97	3,787.35
.....	1,250.00	2,500.00	1,250.00	5,000.00
.....	.....	686.68	.....*	686.68
.....	1,273.09	1,500.00	1,750.00	4,523.09
1,706.66	1,050.00	.....	.....	2,756.66

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913– Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
State Health Services—				
Continued				
Vital Statistics—				
Continued				
Foreign:				
Colombia.....	\$.....	\$.....	\$.....	\$.....
Denmark.....
Public Health Labora-				
tory Service.....	16,109.70	26,325.29	32,180.74
United States:				
Alabama.....	3,261.03	9,973.47
Arkansas.....	1,676.16
Connecticut.....
Delaware.....
Kansas.....	2,539.88	5,468.14	2,693.88
Maine.....
Missouri.....	874.99	.....
Montana.....	676.74
Oregon.....	900.00
South Carolina..
Tennessee.....	250.00	2,888.45
Texas.....
Utah.....
Virginia.....	899.51
Foreign:				
Colombia.....
Costa Rica.....	303.14
Guatemala.....	307.50	621.75	1,581.36
Honduras.....	4,222.71
Nicaragua.....	85.18	2,445.53	3,271.69
Philippine Islands
Salvador.....	984.34	1,028.72	3,093.63
Demonstrations..	206.33	.....
Administration..	12,192.80	12,168.80	.....
Public Health Nursing				
Brazil:				
Service of Nursing	14,630.10	25,654.17
France.....	14,630.10	25,654.17
Other Services.....	32,046.83	40,306.17
Australia.....	20,000.00	21,432.73
Canada.....
Honduras.....
Jamaica.....

* Reports incomplete.

1913-1927, *Inclusive, Covering All Activities—Continued*

1924	1925	1926	1927	Total
\$.....	\$.....	\$.....	\$863.67	\$863.67
.....	.....	1,581.19	1,604.59	3,185.78
41,767.89	49,867.98	45,901.30	40,146.75	252,299.65
12,560.85	7,479.00	7,494.53	5,403.75	46,172.63
3,836.39	1,195.41	.....*	.....	6,707.96
375.00	1,800.00	.....	.....	2,175.00
1,500.00	.....	.....	.....	1,500.00
.....	.....	.....	.....	10,701.90
.....	600.00	1,300.00	780.00	2,680.00
2,067.41	1,771.48	2,049.17	3,600.00	10,363.05
2,100.00	1,050.00	.....	.....	3,826.74
2,688.37	1,120.32	340.98	.....	5,049.67
.....	498.92	300.00	.....	798.92
2,166.66	2,301.16	938.13	985.00	9,529.40
.....	70.83	2,789.82	2,992.40	5,853.05
1,900.00	2,775.00	2,868.92	.....	7,543.92
1,053.96	995.53	249.65	.....*	3,198.65
.....	.....	410.50	4,896.99	5,307.49
2,994.39	3,636.12	2,757.05	194.81	9,885.51
1,715.94	1,546.64	3,894.27	3,835.45	13,502.91
.....	.....	.....	.....	4,222.71
6,808.92	12,882.86	12,616.35	9,492.35	47,602.88
.....	.....	.....	7,966.00	7,966.00
.....	.....	.....	.....	5,106.69
.....	.....	.....	.....	206.33
.....	10,144.71	7,891.93	.....	42,398.24
22,701.51	52,236.15	21,010.29	24,558.12	160,790.34
22,701.51	26,497.42	21,010.29	24,558.12	135,051.61
.....	25,738.73	.....	.....*	25,738.73
22,238.37	11,552.74	7,230.65	27,768.69	141,143.45
9,715.68	.....	.....	.....	51,148.11
577.93	.....	.....	.....	577.93
.....	5,740.85	6,876.19	.....	12,617.04
.....	.....	354.46	554.41	908.87

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913– Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
State Health Services— <i>Continued</i>				
Other Services— <i>Cont'd</i>				
Philippine Islands..	\$.....	\$.....	\$12,046.83	\$18,873.44
Iowa.....	.....	.....	.....	.....
Illinois.....	.....	.....	.....	.....
Administration. State Health Services.....	.....	.....	.....	.....
PUBLIC HEALTH				
ADMINISTRATION				
Bureaus of Study and Reform of Health Activities.....	12,708.81	20,736.31	5,534.47	7,720.00
Czechoslovakia....	12,708.81	20,736.31	5,534.47	7,720.00
France.....	.....	.....	.....	.....
Hungary.....	.....	.....	.....	.....
Poland.....	.....	.....	.....	.....
Health Section of League of Nations..	.....	.....	15,020.00	98,940.89
Interchange of public health personnel.....	.....	.....	15,020.00	63,080.00
Epidemiological In- telligence Service..	.....	.....	.....	29,215.44
Epidemiological In- telligence Bureau, Far East.....	.....	.....	.....	.....
Training in vital statistics.....	.....	.....	.....	6,645.45
Expenses of Dr. W. H. Welch....	.....	.....	.....	.....
Conference in Singapore.....	.....	.....	.....	.....
MISCELLANEOUS.....	256,465.18	31,256.47	15,605.53	11,065.32
Surveys and Exhibits.	115,568.70	13,437.76	.....	.....
Library.....	1,844.12	.....	.....	.....
Philippine Hospital Ship.....	37,500.00	.....	.....	.....
Investigation of Sew- age Disposal in Ru- ral Homes.....	11,090.11	.....	.....	.....
Medical Commission to Brazil.....	18,513.47	.....	.....	.....
Adviser in Medical Education.....	14,391.86	.....	.....	.....
Investigation of Pow- dered Milk.....	500.00	.....	.....	.....

* Reports incomplete.

1913-1927, *Inclusive, Covering All Activities—Continued*

1924	1925	1926	1927	Total
\$11,944.76	\$5,811.89	\$.....	\$.....	\$48,676.92
.....	.....	.....	800.00	800.00
.....	.....	.....	100.00	100.00
.....	.....	.....	26,314.28	26,314.28
<i>17,720.00</i>	<i>32,540.99</i>	<i>20,029.66</i>	<i>14,520.87</i>	<i>131,511.11</i>
<i>12,720.00</i>	<i>7,720.00</i>	<i>7,720.00</i>	<i>7,520.00</i>	<i>82,379.59</i>
<i>5,000.00</i>	<i>13,638.69</i>*	<i>18,638.69</i>
.....	<i>4,987.67</i>	<i>5,000.00</i>	<i>4,991.74</i>	<i>14,979.41</i>
.....	<i>6,194.63</i>	<i>7,309.66</i>	<i>2,009.13</i>	<i>15,513.42</i>
<i>151,400.60</i>	<i>163,004.90</i>	<i>139,295.01</i>	<i>46.63</i>	<i>567,708.03</i>
<i>91,353.22</i>	<i>83,775.25</i>	<i>73,484.58</i>	<i>31.63</i>	<i>326,744.68</i>
<i>32,808.37</i>	<i>32,532.70</i>	<i>20,229.96</i>	.....	<i>114,786.47</i>
.....	<i>26,802.27</i>	<i>25,000.00</i>	<i>15.00</i>	<i>51,817.27</i>
<i>20,700.54</i>	<i>19,894.68</i>	<i>20,580.47</i>	.....	<i>67,821.14</i>
<i>3,087.38</i>	.....	.....	.....	<i>3,087.38</i>
<i>3,451.09</i>	.....	.....	.....	<i>3,451.09</i>
<i>10,171.07</i>	<i>9,905.54</i>	<i>10,418.44</i>	<i>19,666.32</i>	<i>364,553.87</i>
.....	.....	.....	.....	<i>129,006.46</i>
.....	.....	.....	.....	<i>1,844.12</i>
.....	.....	.....	.....	<i>37,500.00</i>
.....	.....	.....	.....	<i>11,090.11</i>
.....	.....	.....	.....	<i>18,513.47</i>
.....	.....	.....	.....	<i>14,391.86</i>
.....	.....	.....	.....	<i>500.00</i>

Table of Expenditures for Public Health Work for the Years

ACTIVITY, STATE, AND COUNTRY	July 1, 1913– Dec. 31, 1920	1921	1922	1923
GENERAL BUDGET				
Miscellaneous— <i>Cont'd</i>				
Paris Conference on International Nomenclature of Causes of Death...	\$ 615.30	\$.....	\$.....	\$.....
Compilation of Mining Sanitary Code.....	.....	125.98	77.20	.....
Smallpox Vaccine for Vera Cruz, Mexico.....	.....	.....	.....	165.62
Plans for Laboratory at Nictheroy, Brazil.....	.....	.....	.....	429.98
Field Equipment and Supplies.....	35,639.46	4,982.25	5,189.62	6,688.08
Pamphlets, Charts, and Films.....	17,573.24	10,153.44	8,869.43	3,057.48
Hookworm and Malaria Films Donated or Lent.....	.....	.....	.....	.....
Express, Freight, and Exchange.....	3,228.92	2,557.04	1,469.28	724.16
Field Research in Respiratory Diseases.....	.....	.....	.....	.....
BUILDINGS, EQUIPMENT AND ENDOWMENT				
Schools and Institutes of Hygiene and Public Health.....	649,095.33	323,579.38	7,400,343.04	922,738.39
Brazil. Bahia.....	.....	.....	.....	.....
São Paulo.....	.....	.....	.....	.....
Canada. Toronto.....	.....	.....	.....	.....
Czechoslovakia. Prague.....	.....	204.51	3,416.41	4,964.84
Denmark. Copenhagen.....	.....	.....	22,774.78	209,023.55
England. London.....	.....	.....	.....	.....
Hungary. Budapest.....	.....	.....	.....	.....
Norway. Oslo.....	.....	.....	.....	.....
Poland. Warsaw.....	.....	.....	.....	90,000.00
Trinidad.....	.....	.....	.....	.....
United States:				
Harvard University.....	.....	41,500.00	1,209,034.25	618,750.00
The Johns Hopkins University.....	649,095.33	281,874.87	6,165,117.60	.....
Yugoslavia				
Belgrade.....	.....	.....	.....	.....
Zagreb.....	.....	.....	.....	.....
Schools of Nursing				
Brazil.....	.....	.....	.....	.....
School of Native Medical Assistants, Suva, Fiji.....	.....	.....	.....	.....

1913-1927, Inclusive, Covering All Activities—Continued

1924	1925	1926	1927	Total
\$.....	\$.....	\$.....	\$.....	\$ 615.30
.....	.....	.....	.....	203.18
.....	.....	.....	.....	165.62
.....	.....	.....	.....	429.98
6,949.08	6,689.78	5,302.81	12,890.35	84,331.43
2,389.95	2,884.85	6,290.94	1,406.92	52,626.25
.....	40.00	99.12	429.90	569.02
832.04	290.91	Cr. 1,274.43	408.35	8,236.27
.....	.....	.....	4,530.80	4,530.80
637,110.81	1,107,004.53	1,262,514.32	1,414,262.06	13,716,647.86
.....	3,595.40	.....	.....	3,595.40
.....	.....	46,900.00	23,987.00	70,887.00
.....	262,500.00	162,500.00	12,500.00	437,500.00
9,610.81	202,886.77	160,475.99	95,054.50	476,613.83
.....	198,833.61	.....	.....	198,833.61
.....	205,000.00	689,628.33	969,783.48	2,096,210.14
.....	40,000.00	.....	60,297.54	100,297.54
.....	.....	86,050.00	100,626.54	186,676.54
202,500.00	.....	.....	.....	292,500.00
.....	4,851.25	4,885.00	4,872.00	14,608.25
425,000.00	31,250.00	25,000.00	137,250.00	2,487,784.25
.....	.....	.....	.....	7,096,087.80
.....	33,950.00	.....	.....	33,950.00
.....	124,137.50	87,075.00	9,891.00	221,103.50
.....	30,210.85	99,296.67	129,507.52
.....	9,660.00	9,660.00

STAFF OF THE INTERNATIONAL HEALTH DIVISION DURING 1927

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Victor G. Heiser, M.D. Wilbur A. Sawyer, M.D.

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¹ Resigned.

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Andrew F. Weir, M.D.¹
Joseph H. White, M.D.¹

¹ Resigned.² Died September 19, 1927.

DIVISION OF MEDICAL EDUCATION
Report of the Director

To the President of the Rockefeller Foundation:
Sir:

I have the honor to submit herewith my report as Director of the Division of Medical Education for the period January 1, 1927, to December 31, 1927.

Respectfully yours,

RICHARD M. PEARCE

Director

DIVISION OF MEDICAL EDUCATION

The work of the Division of Medical Education, as extended in 1927, is described below under the headings "Medical Education,"¹ "Nursing Education," and "Miscellaneous Activities." In view of the fact that work in China was previously administered separately, it is here considered by itself, following other projects in medical education.

Medical Education

The program in medical education has continued to include visits by members of the staff to foreign countries; international exchange of experience through visits by professors and administrators of medical schools to schools in countries other than their own, through fellowships for young physicians to enable them to obtain additional preparation for teaching positions to which they are to return on completion of their studies, and through publication in "Methods and Problems of Medical Education" of papers by medical leaders in various countries

¹ Programs relating to medical schools in the United States are cared for by the General Education Board, a distinct organization founded by Mr. Rockefeller. The cooperation of the Rockefeller Foundation with medical schools, but not with schools of hygiene, is therefore limited to countries other than the United States.

on medical school building, equipment, and methods of teaching; aid for improvement of teaching and research through provision of laboratory supplies, medical literature, and local fellowships; and capital aid for development of medical institutions in Europe, Asia, and North and South America.

Visits and Surveys by Staff Members

Visits were made by members of the staff of the Division to institutions of medical education in Austria, Bulgaria, China, Chosen (Korea), Denmark, Egypt, England, France, Germany, Hongkong, Hungary, Iceland, India, Iraq, Ireland, Italy, Japan, the Philippine Islands, Rumania, Russia, Scotland, Spain, the Sudan, Syria, Venezuela, and Yugoslavia. The visits to Iceland, India, Iraq, Russia, the Sudan, and Venezuela were for the purpose of making initial surveys.

Visitors from Foreign Countries

During the year prominent medical educators from Australia, Cuba, Haiti, Japan, and Scotland visited medical schools of Canada and the United States as guests of the Foundation. From the Medical School of the University of Melbourne, Australia, came Dr. Richard J. A. Berry, dean, who returned to Melbourne by

way of England. The Medical School of the University of Habana, Cuba, which is planning new buildings, sent Dr. Solano Ramos, dean, Professor Carlos Finlay, who represented clinical medicine, Professor Aristides Agramonte representing laboratory subjects, and Professor Felix Martin of the Habana School of Engineers and Architects. Dr. Justin Dominique, dean, came from the National School of Medicine and Pharmacy in Port-au-Prince, Haiti. Dr. Tai-chi Kitashima, dean of the Medical School of Keio University, Tokyo, Japan, with Dr. Yoshio Kusama, professor of hygiene in Keio University, visited numerous medical schools in crossing America on the way from Europe to Japan. Dr. A. Ray Gilchrist of the University of Edinburgh, working temporarily in the United States, was invited to visit various medical teaching centers here before his return to Great Britain. Funds were provided to enable two professors from the Chulalongkorn University Medical School in Bangkok, Siam, with which the Foundation is cooperating, to attend as delegates the meeting of the Far Eastern Association of Tropical Medicine in Calcutta. Numerous visitors connected with medical schools and hospitals, though traveling independently, requested suggestions and assistance from the New York and European offices of the Foundation concerning

introductions and itineraries which would enable them to see in the time at their disposal the phases of medical education in which they were particularly interested.

“Methods and Problems of Medical Education”

Three volumes of “Methods and Problems of Medical Education” were issued during the year. Of these, *Series 6* is a general number containing articles on medical libraries, various laboratory and clinical departments, and teaching methods in institutions in Australia, Austria, Belgium, Brazil, Canada, China, Denmark, England, Germany, Hungary, Ireland, Italy, the Netherlands, Rumania, and the United States; *Series 7* is composed of descriptions of the new school of Medicine and Dentistry of the University of Rochester, at Rochester, New York; *Series 8* is a clinical number, containing articles from Austria, Canada, China, England, France, Germany, Hungary, Italy, the Netherlands, Scotland, Switzerland, and the United States. The tables of contents of these volumes form Appendix 1, pages 287 to 290.

Fellowships

Fellowships in medical education have proved a most valuable part of the work of the Foundation. These are awarded by preference to

young physicians connected with institutions with which the Foundation is already cooperating. On recommendation of the authorities of their schools and with the promise of receiving and accepting assured positions in these schools on the termination of their fellowships, these physicians study in other countries, thus taking their country's point of view to foreign schools and bringing back to their home schools a new outlook to help in their future careers as teachers and investigators. In addition to the grants to fellows from China, described in a separate section of this report (see page 251), the Foundation in 1927 administered under its own auspices 111 foreign fellowships in medical education. Japan and Rumania each furnished ten of the fellows; Canada and Haiti eight each; Germany, Italy, and Siam seven each; Hungary six; Brazil, France, Poland, and Yugoslavia four each; Austria, Latvia, and Syria three each; Estonia, Hongkong, Norway, the Philippine Islands, Sweden, and Turkey two each; and Argentina, Belgium, Denmark, England, India, Lithuania, Mexico, the Netherlands, Peru, Scotland, and South Africa one each. These fellows studied in Austria, Belgium, China, Czechoslovakia, England, France, Germany, Italy, the Netherlands, Scotland, Switzerland, and the United States. The following classification according to subjects

studied shows the preference given to applicants for fellowships in preclinical subjects: chemistry, nineteen; pathology, bacteriology, immunology, sixteen; physiology, fifteen; clinical laboratory methods and medical specialties, thirteen; anatomy and related subjects (histology, embryology, cytology), twelve; surgery and surgical specialties, nine; hygiene, six; pharmacology, six; pediatrics, four; biology, three; psychiatry, two; roentgenology, two; obstetrics and gynecology, one; ophthalmology, one; parasitology, one; physics, one.

To promote interchange of experience between medical teachers and investigators of Great Britain and the United States the Foundation has continued to support fellowships administered by the British Medical Research Council for study in the United States. During 1927 fourteen of these fellowships were in operation, four in pathology, two each in internal medicine, pediatrics, psychiatry, and biochemistry, and one each in surgery and bacteriology.

In cooperation with the General Education Board forty-five fellowships in medicine were supported under the National Research Council, Washington, D. C., for the development of teachers and investigators of medicine for this country and Canada. Although most of these fellowships are granted for study in Canada or the United

States, one of the fellows studied in Czechoslovakia, four in England, two in Germany, and one in Switzerland. The subjects studied were as follows: physiology, eleven; biochemistry, ten; pathology, seven; bacteriology, five; pharmacology, three; internal medicine, two; anatomy, two; dermatology and syphilology, one; neuropathology and neuroanatomy, one; neurosurgery, one; obstetrics, one; surgery, one. An arrangement was made with the Emergency Committee of German Science to continue local fellowships and scholarships in Germany. During the year fifteen local fellowships and thirty-three scholarships were in force. An agreement, which it is hoped will go into effect in 1928, was worked out with the Committee for selection of German fellows in the future on a plan similar to that in operation with the British Medical Research Council.

Developmental Aid

A program undertaken in 1925 for recruiting the ranks of teachers and investigators, by assisting in a small way departments active in attracting and training young graduate physicians, has been continued. Assistance may include apparatus, literature, stipends, expense of research, or it may take some other form which may help the head of the department to increase

its efficiency for the training of future teachers or investigators in the medical sciences. In 1927 aid of this kind was given to twelve departments in Italy and three in France which had been assisted during the preceding year, and to the following additional departments:

France

Institute of Hygiene, Medical Faculty, University of Paris	Professor L. Bernard
Institute of Pharmacology, Medical Faculty, University of Paris	Professor Tiffeneau
Institute of Biological Chemistry, Medical Faculty, University of Strasbourg	Professor M. Nicloux
Institute of Histology, Medical Faculty, University of Strasbourg	Professor Paul Bouin

Italy

Institute of Hygiene, Rome	Professor G. Sanarelli
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Laboratory Supplies

Aid in furnishing laboratory supplies, as an emergency program in Europe after the war, was discontinued at the end of 1926. In 1927, however, a new program was undertaken to assist in reestablishing returned fellows by providing them with necessary laboratory supplies for continuing work along the lines already begun during their fellowships. In the course of the year supplies

were granted to five persons in Austria, three in Bulgaria, two in Italy, two in Rumania, and one in each of the following countries, Belgium, England, Germany, Lithuania, Sweden, and Yugoslavia. On the same basis aid in laboratory supplies was given to returned fellows in the Faculty of Medicine, São Paulo, Brazil.

In Siam somewhat analogous aid was given for equipment to be used by visiting professors who are helping to develop the Medical School of Chulalongkorn University while Siamese are being trained to succeed them.

Medical Literature

Assistance in obtaining medical literature was first undertaken as a postwar emergency measure in countries suffering from low exchange where institutions were consequently unable to purchase the foreign journals that would keep them in touch with current developments in medicine. In view of decreasing need for this aid grants have been diminished and will presently be terminated. In the year 1927, however, literature was supplied to 260 institutions in nineteen countries, namely, Austria, Belgium, Bulgaria, Czechoslovakia, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Rumania, Russia, Switzerland, Turkey, and Yugoslavia. For a different reason

literature was supplied also to the medical school of Siam.

Aid to Medical Institutions

Faculty of Medicine and Pharmacy, University of Lyon, France.—The city of Lyon, France, has been building a large new hospital, to the site of which the Faculty of Medicine and Pharmacy wishes to move for concentration of medical teaching at one location. After visits by representatives of the faculty in 1925 and 1926 to medical schools in Great Britain, Canada, and the United States, to become acquainted with recent developments in those countries, a plan was worked out by the faculty for a combined medical school and hospital, with rearrangement of courses to add emphasis to preclinical laboratory work. This plan was presented to the Rockefeller Foundation as a basis for cooperation. The Lyon authorities proposed that the medical school exchange its present site and quarters near the old university building for a larger area of ground next to the new city hospital; construct a new building to house the laboratories, library, and administrative offices; use wards and laboratories of the new city hospital for its clinical teaching; and increase maintenance funds for the present faculty's new quarters. The authorities further proposed that, to this end, the Rocke-

feller Foundation cooperate with the University of Lyon, and through the university with the French Government, private donors, and the municipality of Lyon which will bear both initial and maintenance costs of all the clinical departments of the proposed combined school. With other aid assured, the Foundation pledged a contribution toward purchase of land and cost of construction of a building to house the Faculty of Medicine and Pharmacy and for maintenance of improved facilities for teaching in that faculty.

Keio University Medical College, Tokyo, Japan.

—This modern institution, consisting of combined medical school and hospital, included in its department of pathology and bacteriology divisions of hygiene and parasitology, with consequent overcrowding of all. The university authorities, wishing to segregate the divisions of hygiene and parasitology, formed them into a new independent department, for which they arranged to provide a budget equal to that of other existing departments in the medical sciences, and to furnish land adjacent to the present medical school and hospital as a building site. To cooperate in this plan the Foundation agreed to provide funds for a building of earthquake- and fire-proof construction and for equipment for laboratories of hygiene and parasitology; its first payment was made in 1927.

In connection with this development the Dean of the Medical School and the Professor of Hygiene were invited to visit medical institutions in North America and fellowships were granted to the Professor of Hygiene and an assistant.

National School of Medicine and Pharmacy, Port-au-Prince, Haiti.—Another entirely new undertaking during the year was aid to the National School of Medicine and Pharmacy at Port-au-Prince, Haiti. This institution, established in 1808, is now building a new school on the grounds of a new teaching hospital. The aim is to train men for the sanitary service of the country. After a survey by the Director of this Division in 1926, it was agreed that the Foundation could best assist by contributing funds for additional laboratory equipment, and providing opportunity for the Dean and prospective professors to become acquainted with medical education elsewhere.

London Hospital and Medical College, England.—The Professor of Pathology of London Hospital Medical College developed plans for the unification of the pathological laboratory and other laboratories of the college and of the hospital, which he presented to the Rockefeller Foundation with a request for assistance in putting it into effect. Aid towards this object was given in 1927.



West end of the new pathological laboratory which has been erected by the American University of Beirut as a part of its program for the development of the Medical School. The Foundation is cooperating in this program.



National School of Medicine and Pharmacy, Port-au-Prince, Haiti. The Foundation is contributing funds for the purchase of laboratory equipment for this school and is providing fellowships for foreign study for certain of its specially qualified graduate students.



Pathology laboratory of the Chulalongkorn University Medical School, Bangkok, recently built by the Siamese. The Foundation is cooperating with the Government of Siam in a program for expanding and improving the teaching and laboratory facilities of the school.



New surgical building of the Chulalongkorn University Medical School, erected with funds contributed by the Foundation.

University of Zagreb Medical School, Yugoslavia.—A plan was presented by Dr. Stampar, chief of the Public Health Service of Yugoslavia, for housing the department of hygiene of the University of Zagreb in the Institute and School of Hygiene, which was opened in the fall of 1927. This institution had been planned as distinct from the Medical School, since the School of Hygiene was originally intended only for post-graduate training of health officers. However, as the proposed combination would afford the professor of hygiene of the Medical School excellent facilities for his teaching and for bringing the medical students into contact with real and immediate public health problems, a small grant was made by the Foundation towards the equipment and maintenance of the department of hygiene in the Institute of Hygiene during a term of four years.

American University of Beirut, Syria.—Following three and a half years' operation of the Foundation's five-year pledge of annual aid ending June 30, 1929, for the development of the Medical School of the University of Beirut, a request from the President of the University and the Dean of the Medical School for support during the years 1927 and 1928 of a health center in connection with the medical school was granted. The purpose of the health center is to improve

the work of the hospital and increase opportunities for practical teaching to students of medicine and nursing in the subjects of medicine, pediatrics, obstetrics, and public health. In the five-year period of annual aid fellowships are being granted for training personnel for the preclinical departments of this medical school and assistance is being given to develop the library and to make possible the establishment of a fifth or intern year. The university at the same time is eliminating a deficit in its annual budget, building a new laboratory for pathology and bacteriology, and a new nurses' home. Full-time qualified teachers have been secured for anatomy, histology, pathology, and pharmacology; the hospital and library have been reorganized; and the intern year established. An appropriation has now been made for building and equipping an outpatient clinic, a chemistry building, and a building for the laboratory sciences of medicine. A pledge has been given for future capitalization of the five-year annual grants.

University College, London.—In 1920 the Foundation supplied funds for developments which University College and University College Hospital Medical School wished to make in various laboratory, clinical, and associated departments. After these developments had been effected, it seemed advisable to the Foundation in 1927 to

round out the program by endowment for increased maintenance costs for the departments of anatomy, physiology, and pharmacology.

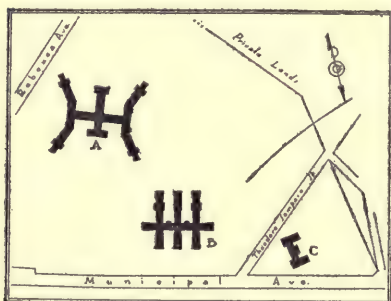
Harvard School of Public Health, Boston.—A pledge was made for the endowment of the Harvard School of Public Health to permit further developments in epidemiology, public health administration, child hygiene, vital statistics, physiology and hygiene, entomology, parasitology, and protozoology, and for maintenance and certain reconstruction of the library. Work was begun in 1927 on the new basis, and first payments were made by the Foundation.

Continuation of Earlier Programs

In continuation of previous undertakings, the Foundation cooperated during 1927 with the authorities of the Medical and Premedical schools of Chulalongkorn University, Bangkok, Siam, by payments toward the cost of new buildings and for supplementary salaries, travel expenses, and other assistance for visiting professors of anatomy, pathology, physiology, medicine, surgery, obstetrics, biology, chemistry, physics, and English. Aid included provision of additional scientific equipment, books, and back numbers of journals. Fellowships were given for training future Siamese professors to succeed the visiting foreign professors.

Final payment was made on the sum pledged in 1926 to the Institute for Psychiatric Research in Munich, Germany, toward the erection of its new building.

Architectural plans were completed by the authorities of São Paulo, Brazil, for a new build-



Plan of the new São Paulo medical center. Units located in various parts of the city of São Paulo are to be brought together in a closely coordinated group in the suburb of Araçá: (A) teaching hospital to be built with state funds, (B) Medical School buildings which the Rockefeller Foundation will help to erect, (C) Institute of Hygiene to be constructed and equipped with the aid of the Foundation.

ing to house the Faculty of Medicine. Construction was about to begin at the end of the year, and the Foundation appropriated funds to start payments in accordance with its pledge of aid in this project.

Payments were made to the University of Strasbourg for a new building for the department of histology; to the Free University of Brussels toward completing the building and equipment of its new Medical School; to the University of Edinburgh toward the development of surgical and medical teaching in the Medical School; to the University of Cambridge for the endowment of the School of Pathology; and to the University of Montreal for the development of laboratories.



New building of the Institute for Psychiatric Research, Munich, erected with the assistance of the Foundation.



A laboratory in the new building of the Institute for Psychiatric Research, Munich.



Free University of Brussels, which has been aided by the Foundation in a program of expansion and reconstruction.



New medical laboratories building of the State University of Iowa, erected with the aid of the General Education Board and the Rockefeller Foundation.

A final payment was made on the pledge of 1922 to the State University of Iowa for the development of the Medical School. This latter pledge was made on the initiative of the General Education Board and with its cooperation.

Staff Changes

Dr. Henry S. Houghton, formerly director of the Peking Union Medical College and during 1927 appointed associate director of the Division of Medical Education, resigned to accept the directorship of the Medical School and Hospital of the State University of Iowa.

Mr. N. Gist Gee and Miss Margery K. Eggleston, formerly officers of the China Medical Board, have been added to the Division staff as field director and assistant respectively.

Activities in China*

Educational Situation in China

The political changes in China have in many cases, for the time being at least, partially or completely disrupted the work of various educational institutions. The spread of the nationalist movement over Southern and Central China has disturbed educational work for longer or shorter periods, according to the intensity of feeling which has swept over the area. Lingnan

* Beginning April 1, 1927, the work of the China Medical Board was brought under the Division of Medical Education.

University and Fukien Christian University in the south, the first to be affected by the movement, managed under difficult conditions to keep the school work going in a more or less general way. The college of Yale-in-China and the Hsiang-Ya Medical College found it necessary to close. At Nanking University, in spite of the evacuation of the foreign staff, work has been kept up to some extent by the Chinese staff. Schools in Shanghai were also affected; and even as far north as Tsinan the uncertainty as to coming events caused many of the students of Shantung Christian University to leave. Little work was carried on during the spring term. But some of the educational authorities believe that the future of educational work in China is bright. They are pleased with the way in which Chinese who, at the departure of foreigners, have been left with the responsibility of hospitals, schools, and even colleges and universities on their hands, have met the difficulties which they have encountered. It is reported that in some cases work was carried on even more successfully than when a foreigner was in charge. It is believed that any foreign organization willing to work and cooperate sympathetically with the Chinese would be welcomed by them.

The situation with regard to institutions receiving aid from the Foundation can be summa-

rized as follows: concerning two no information has been received, three are actually closed, thirteen are carrying on much as usual, ten are running under Chinese staff, one is carrying on with Chinese staff where missions are not contributing, two are operating under Chinese control with continued support from missions, one closed but reopened under foreign staff, two are in process of reorganization, one has been taken over by the military.

Since appropriations to these institutions are in most instances small and, especially in the case of the hospitals, probably will not be renewed, it was felt by the trustees of the Foundation that payments should be made on appropriations when it was evident that all possible effort had been made by the authorities to meet the conditions of the appropriations, even though the full letter of the agreement might not have been carried out. Accordingly, action was taken at the meeting of the trustees on November 4, 1927, instructing the officers to carry out the spirit of the various resolutions rather than the letter when asked to make payments upon outstanding appropriations to medical schools, science departments of colleges, and hospitals in China.

New Appropriations and Changes in Appropriations

When the Hsiang-Ya Medical College, formerly the Hunan-Yale Medical College, closed

in the spring of 1927, the five-year appropriation of Mex. \$80,000 a year made to that institution was no longer payable, although payment was made for the full academic year 1926-1927 to carry the school through the obligations already entered upon for that year. The question of continuing the education of the medical students of this school was met in several ways. The Peking Union Medical College admitted six of them, and twenty-eight were enrolled in the Shanghai Union Medical College, which has recently been established largely through the effort of the St. John's University and the Fourth Chung San University—successor to National Southeastern University at Nanking. A grant of Mex. \$20,000 was made to the Shanghai Union Medical College for the year 1927-1928 to help in providing new laboratory equipment, dormitory facilities, and other facilities needed for the twenty-eight students. No renewals of appropriations were made for pre-medical work in 1927.

The program of aid to mission hospitals practically closed with the year 1927 in so far as new appropriations are concerned. Terminal appropriations to enable the missionary societies gradually to take over the support contributed by the Foundation were made to the following hospitals: the Tehchow hospital of the American

Board of Commissioners for Foreign Missions, \$7,000 over a period of four years toward general maintenance expenses; the Luchowfu hospital of the United Christian Missionary Society, Mex. \$20,000 over a period of three years toward general maintenance expenses; and the Sleeper Davis Memorial Hospital of the Woman's Foreign Mission Society of the Methodist Episcopal Church, with which the School of Nursing of the Peking Union Medical College is cooperating, Mex. \$960 a year over a period of three years toward the salary of one instructor in the Nurses' Training School. An old appropriation, totaling \$8,400, to the Nantungchow hospital of the United Christian Missionary Society for an additional foreign doctor was reallocated over a period of five years beginning in 1927 and amended so that the funds could be used for general maintenance expenses.

**Payments Continued on Appropriations Made in
Previous Years**

Shantung Christian University met the conditions of the appropriation made to it by the China Medical Board, and payment of Mex. \$49,000 was made for the year 1926-1927. Aid previously granted over a period of years toward the departments of biology, chemistry, and physics was continued to the following colleges

and universities: Yenching (Peking) University and Tsing Hua College, Peking; Nankai College, Tientsin; Shantung Christian University, Tsinan; Soochow University, Soochow; St. John's University and Shanghai College, Shanghai; Nanking University, National Southeastern University, and Ginling College, Nanking; Fukien Christian University, Foochow; Lingnan University, Canton; and the college of Yale-in-China at Changsha.

Aid toward general maintenance expenses previously granted over a period of years was continued to the following hospitals: Fenchow and Tehchow hospitals of the American Board of Commissioners for Foreign Missions; Peking and Wuhu hospitals of the Board of Foreign Missions of the Methodist Episcopal Church; Soochow hospital of the Board of Missions of the Methodist Episcopal Church, South; Huchow hospital of the Board of Missions of the Methodist Episcopal Church, South, and American Baptist Foreign Mission Society, jointly; the Changteh, Chefoo, Hwaiyuen, and Paotingfu hospitals of the Board of Foreign Missions of the Presbyterian Church in the United States; Ichang hospital of the Church of Scotland Foreign Mission Committee; Anking hospital of the Domestic and Foreign Missionary Society of the Protestant Episcopal Church in the United States;

Siaochang hospital of the London Missionary Society, toward salary of an additional nurse; Yangchow hospital of the Foreign Mission Board of the Southern Baptist Convention; Luchowfu hospital of the United Christian Missionary Society; and the Nanking University hospital. Payment was made on a capital appropriation to the Amoy hospitals of the Board of Foreign Missions of the Reformed Church in America.

Aid was continued to the China Medical Association to which an appropriation of Mex. \$10,000 a year for five years for general expenses of the Association was made in 1926.

Fellowships

Fellowships were granted to doctors and nurses for graduate study in the United States and Europe and in the Peking Union Medical College. Of the forty-seven fellowship holders who studied in Europe or America, twenty-nine were Chinese and eighteen were Americans or Europeans. Of the eighty doctors and nurses in China who were given fellowships for study in the Peking Union Medical College, forty-seven were Chinese and thirty-three were Americans or Europeans. The total expenditure for fellowships in the Peking Union Medical College was \$7,186.66, including five trustees' undergraduate scholarships in the Medical School and

School of Nursing. For fellowships in the United States and Europe \$43,888.50 was expended.

Emergency Aid to Wounded Soldiers in Hankow

On May 31, 1927, the Foundation's Vice-President in the Far East, who is stationed in Peking, received an urgent appeal from the Chairman of the Wuhan Wounded Soldiers' Relief Association for aid in caring for the great numbers of wounded at Hankow. After a conference with the Director of the Peking Union Medical College, other members of the college faculty, and a Chinese adviser, it was decided that a response should be made to this appeal.

No surgeons could be spared from the college, but two foreign nurses and five Chinese nurses, four of them men, volunteered. Dr. Fu Chun Yen, formerly president of Hsiang-Ya Medical College, who was in Shanghai at the time, was instrumental in organizing a unit under the Chinese Red Cross to go to Hankow. The unit from the Peking Union Medical College became a part of this Red Cross group. The total unit was composed of forty-four persons, including twelve doctors (six foreign), twenty-two nurses, two pharmacists, one technician, three administrative officers, and four attendants. The whole group was in the charge of Dr. Yen.



Corner of a ward in Emergency Hospital No. 1, Hankow, China. The beds consisted of two boards, each about sixteen inches wide, placed on wooden horses and covered with matting.



Faculty and students of the School of Nursing of the Peking Union Medical College, 1927.



Class in biology, St. John's University, Shanghai, China. This institution is receiving aid from the Foundation for the development of its departments of biology, chemistry, and physics.



New building of the Wuhu Hospital, to the general maintenance of which the Foundation is contributing.

During the boat journey from Shanghai to Hankow members of the group prepared linen, gowns, and dressings. When Dr. Yen and the Foundation's Vice-President in the Far East arrived they found about eleven thousand wounded soldiers in Hankow and Wuchang. Two temporary hospitals, one of which was already fitted up, were taken over by the Red Cross unit. Both of these buildings had been cabarets, and across the front of one the sign *Eldorado* still blazed. It was decided that the serious cases should be sent to these two hospitals, the *Eldorado* receiving the most serious. One foreign doctor and three foreign nurses were assigned to reenforce the staff of the Hodge Memorial Hospital, which was crowded with wounded.

The Red Cross unit was able also to dispatch a group composed of four doctors, four nurses, one business manager, and three attendants—all Chinese—to Chengchow at the request of General Feng Yu Hsiang, and to send a staff of one doctor, five nurses, one pharmacist, and a business manager to organize a base hospital in Kiukiang, to be conducted and financed entirely by the Wuhan Wounded Soldiers' Relief Association. Some educational health work was also done. Two health posters concerning the prevention of cholera, dysentery, and typhoid were

prepared and printed, and one hundred thousand of each distributed in Wuhan, Chengchow, and Kiukiang. The expense of this work was borne by the Relief Association. The Foundation's share of expenses for the relief work was \$5,245.85.

Peking Union Medical College

Concerning the future of the Peking Union Medical College, the Director makes the following comment in his report for the year 1926-1927:

The accident of location in the north of China has spared the Peking Union Medical College thus far from destructive influences, and in spite of occasional periods of acute anxiety and apprehension, the program of the college has been carried out during the academic year 1926-1927 more successfully than in any previous session. As one looks forward, moreover, in the light of the gradual changes which have been taking place in the character of the Chinese revolution, it seems reasonable to hope that no sudden changes in policy or procedure will be forced upon the college, and that its final objectives may be attained by orderly and gradual processes; if this be so, there is every indication that sound progress will continue in every department.

An additional \$200,000 was appropriated for carrying on a second construction program in 1927. At the meeting of the trustees of the Foundation in November, 1927, a further \$181,000 was appropriated, including \$25,000 for movable equipment and \$10,000 for accessories. In the fall \$105,000 was appropriated for the construction of an isolation building for infectious diseases.

Work on this building was started and footing for main and outside walls finished. The new Oliver Jones Hall, a dormitory for women nurses and students—which with the clinic and laboratory building (O Building) and additions to the mechanical plant forms the second construction program—has been completed; the new clinic and laboratory building has been completed as far as the roof. Extensive additions and improvements to the mechanical plant have also been effected.

At the April meeting of the trustees, a revision of the by-laws was adopted. In general, the changes made had two aims: (1) to simplify business, reduce the burden of committee work for important members of the staff, and secure better procedure for discussion of professorial appointments, and (2) to increase the powers of the Director, faculty, and Administrative Council in order to permit prompt action, particularly in relation to appointments and budget revisions, and so lessen the burden of correspondence in the Director's office at Peking. The functions of the local committees in Peking, the medical faculty, and the Administrative Council, have been revised, and a Committee of Professors has been created. The Budget Committee has been eliminated and its work transferred to the Administrative Council.

The provision for group insurance, which was formerly available only to certain classes of employees, has now been extended to all employees, whether professional or non-professional, who have been in the service of the college for at least a year.

The following changes in the foreign personnel of the college are reported: Dr. Henry S. Houghton, director of the college, in the latter part of 1927 announced his resignation, to take effect early in 1928. Roger S. Greene, vice-president of the Rockefeller Foundation for the Far East, was appointed acting director in Dr. Houghton's place. Dr. Adrian S. Taylor, head of the department of surgery, has joined a former colleague in private practise in the United States. Dr. Harvey J. Howard, head of the department of ophthalmology, has returned to the United States, to accept a position as professor and head of the department of ophthalmology, School of Medicine, Washington University, St. Louis. Dr. O. H. Robertson, head of the department of medicine, has accepted a position in the University of Chicago. Dr. Paul C. Hodges, head of the department of roentgenology, has accepted a position in the University of Chicago. Dr. Carl Ten Broeck, head of the department of pathology, has been appointed a member of the Rockefeller Institute, to serve at Princeton. Dr.

Henry Meleney, associate professor of medicine, left to become associate professor in the department of preventive medicine of Vanderbilt University, Nashville, Tennessee. It is with regret that the college has seen the departure of these members of the faculty, who have been in the institution almost from its beginning and have had much to do with the establishment of standards and morale.

The headship of the department of medicine and that of the department of pathology have been filled by promotion. Certain additional appointments for limited periods in grades from associate to assistant professor have been made, and it is expected that several medical leaders will be asked to go to Peking to serve as visiting professors for a year or two.

The development of the Chinese staff of the Peking Union Medical College is progressing well. Dr. Fu Chun Yen, formerly president of the Hsiang-Ya Medical College, was appointed vice-director and member ex-officio of the medical faculty, its executive committee, and of the Administrative Council, for the year 1927-1928. Dr. Jui-heng Liu has completed a very successful year as medical superintendent of the hospital. Dr. Jui-hua Liu is acting head of the department of otolaryngology for the year 1927-1928 in the absence of Dr. Dunlap who is on furlough.

Dr. Robert Kho-seng Lim was made full professor and head of the department of physiology, as of July 1, 1927. Dr. Chong-eang Lim was made assistant professor of bacteriology and chief of that service. Dr. Hsien Wu remains as head of the department of biochemistry. At the end of June, 1927, there were 108 members of the staff of the Medical School, of whom seventy-two were Chinese and the remaining thirty-six, exactly one-third, were foreigners. Chinese nurses have been steadily replacing foreign nurses so that there are now on the nursing staff only fifteen foreign nurses, whose duties are for the most part those of instruction and administration. The library for the first time is in charge of an experienced and competent Chinese trained by the foreign librarian who is on furlough for the year 1927-1928.

Three of the Chinese members of the staff of the college have taken up other service. Dr. T. M. Li, formerly associate professor of ophthalmology, is serving as visiting professor in St. Luke's Hospital, St. John's University, and taking up private practise. Dr. George Y. Char has been appointed medical superintendent of the Central Hospital in Peking, which is under Chinese auspices, and is continuing his association with the college in part-time service. Dr. Ta-chun Yang, formerly assistant in surgery, has



Sun-porch of the pediatric ward, Peking Union Medical College.



Physiotherapy room, Peking Union Medical College.



Graduating class, Peking Union Medical College, 1927.



Graduates of the School of Nursing of the Peking Union Medical College, 1927.

been appointed surgeon-in-chief at the Methodist Hospital, Peking, also retaining a part-time connection with the college. It is gratifying to find that such satisfactory openings are appearing for Chinese staff and students.

An unusually large entering class enrolled for the year 1927-1928. At least three of its members hold baccalaureate degrees in arts and science. Two students from Hsiang-Ya Medical School were admitted to the entering class, one was admitted to regular standing in the second-year class, and three are following fourth-year work as special students. The following record of enrolment for the year 1927-1928 is given as of November 30, 1927, and compared with the record for the year 1926-1927:

	1926-1927	1927-1928
<i>Medical School</i>		
First Year	16	25
Second year	10	15
Third year	17	8
Fourth year	15	16
Fifth year (interns)	10	14
	<hr/>	<hr/>
Total undergraduates	68	78
Graduate and special students	92	29
	<hr/>	<hr/>
Total Medical School	160	107
<i>School of Nursing</i>		
Course I		
First year	..	9
Second year	7	..*
Third year	3	6
Fourth year	4	3
Course II		
First year	..	3
	<hr/>	<hr/>
	14	21

* No class because of change in curriculum.

Prenursing Course at Yenching

Course I	10	9
Course II		
First year	2	..
Second year	3	1
	<hr/>	<hr/>
Total undergraduates	29	31
Graduate and special students	2	..
	<hr/>	<hr/>
Total School of Nursing	31	31
	<hr/>	<hr/>
Grand Totals	191	138
	<hr/>	<hr/>

Further modifications have been made in the curriculum which was adopted three years ago with the purpose of correlating more closely the teaching of the preclinical sciences with the teaching of medicine. One of the most serious faults was the disproportionately large number of required hours. The formal correlated courses have been dropped, with the exception of the pathological conferences and the course dealing with parasitic diseases, both of which have clearly demonstrated their value. The idea of correlation, however, still dominates the instruction. Departments plan their courses in consultation with other allied departments.

In 1927 it was decided that surgery, outside the field of minor surgery, should be classed as a specialty. Early in the year, therefore, the rotating internship was abandoned and an internship devoted entirely to work in the different divisions of the department of medicine substituted. It was the conclusion of the medical

faculty that this change would be for the best interests of the students.

The kala-azar investigation was continued during 1927. This year practically completed the work. Final papers embodying the results of the four years of field studies will be compiled in 1928.

In spite of political conditions which somewhat unsettled the community, the total number of patients treated in the Peking Union Medical College Hospital was larger for the year 1926-1927 than for the previous year. The following statistics are given:

	1925-1926	1926-1927
Number of patients treated.....	3,970	4,217
Number of outpatient visits		
New.....	18,997	19,285
Old.....	84,150	89,280
	<hr/>	<hr/>
Total outpatient visits.....	103,147	108,565

The number of deaths in the hospital was 224, which gives a mortality rate of 5.5 as compared with 6.9 per cent for the preceding year; 114 autopsies were performed, which show an increase from 28 per cent to 38 per cent.

The work of the Health Center, which began in the fall of 1925 and is now in its third fiscal year, has been steadily growing. Indication that the existence of the Health Center has stimulated public health and sanitary activities in Peking and elsewhere is seen in attempts of

the central police headquarters to enforce street cleaning, and in numerous petitions from citizens regarding sanitary matters. Requests have come to the center from various officials and public sources for assistance in sanitary administration; and letters have been received from distant provinces asking for descriptive printed matter concerning the work.

A special study of the Peking Union Medical College was made by Dr. David L. Edsall, dean of Harvard Medical School, who spent about four months in Peking.

A summarized statement of the receipts and expenditures of the college for the year ending June 30, 1927, will be found in Appendix 2 (pages 291-293).

Other Activities in China

During 1927 the department of anatomy of the Peking Union Medical College cooperated with the Geological Survey of China in the excavation of certain deposits of the late Tertiary or early Quaternary period in the vicinity of Chou Kou Tien, a village about twenty miles southwest of Peking. In 1926 there were found one molar and one premolar tooth in material taken from these deposits. The announcement of this discovery was made at the Peking Union Medical College on October 22, 1926, at a meeting in

honor of the Crown Prince of Sweden, chairman of the Swedish Research Committee. These teeth were identified as being either those of man or of a very closely related anthropoid, and their discovery seems to establish beyond doubt the existence of man or a closely related anthropoid in eastern Asia in the late Tertiary or early Quaternary period.

Under the agreement entered into with the Geological Survey the Foundation contributed Mex. \$24,000 over a period of two years with the understanding that all human or anthropoid material was to remain in the hands of the department of anatomy for study.

The Chou Kou Tien excavation was continued through 1927. The deposit turned out to be much larger than had been supposed and appeared to be in the nature of a fissure rather than a cave, so that it was necessary to cut a vertical section through from the top of the hill. In October, 1927, another unusually fine specimen of a hominid tooth was found, which Dr. Davidson Black, head of the department of anatomy, believes to be from the same individual as one of the two teeth previously found.

From the emergency fund for medical work in China which covers small contributions needed for immediate use and not of sufficient significance to be presented to the Executive Committee, a

grant of 750 Shanghai taels was made to the Church General Hospital, Wuchang, and a grant of 300 Shanghai taels to St. Luke's Hospital, Shanghai, for the purchase of equipment for the eye service.

Nursing Education

The Foundation has worked toward the further development of nursing education both abroad and in the United States. It has sent representatives of its staff to make visits to nursing schools and to make surveys of conditions attendant upon the nursing situation in different countries. A constructive exchange of methods of organization and teaching has been made possible by granting fellowships to nurses for study in a given subject preparatory to assuming a given piece of work and by inviting leaders in nursing education to make visits for the observation and discussion of administrative methods. To certain schools assistance has been given for improving the teaching and toward maintenance, while others have received capital aid, contingent upon a plan of development, for building, equipment, and maintenance.

Surveys and Visits by Staff Members

During 1927 preliminary surveys were made with regard to the situation of nursing education

in Germany, Czechoslovakia, Bulgaria, and Turkey, while forty-four visits were made by staff members in connection with current programs and the supervision of fellows in nursing in Poland, Hungary, Yugoslavia, France, England, Belgium, Austria, Canada, and the United States.

Visits of Teachers and Administrators

Eleven leaders of nursing education were invited by the Foundation to make study visits under its auspices during 1927. Among this number were five recognized leaders in nursing centers in France, Rumania, England, and Hungary for whom such visits were made possible in Europe. Miss Bauer, assistant director of the School of Nursing, Lyon, France, visited Warsaw and Cracow, Poland; Madame Pertia, director of the School of Nursing, Cluj, Rumania, visited schools of nursing in England, France, Belgium, Poland, and Austria. Miss Darbyshire, matron of University College Hospital, London, visited Dr. Clemens Pirquet's Children's Clinic in Vienna. Dr. Johan, director of the State Hygienic Institute, Budapest, and Dr. Csiky, professor of medicine at the University of Debreczen, Hungary, visited schools of nursing in Poland, Germany, Belgium, France, and England. Miss Hedwig Birkner, head nurse of the Children's

Clinic, Vienna, was given an opportunity to study pediatrics and child welfare work in the United States. Miss Iyo Araki, superintendent of nurses and assistant to the American principal of the Nurses' Training School, St. Luke's International Hospital, Tokyo, Japan, also visited the United States to study hospital supervision and modern methods of organization of nurse training. Miss Florence H. Emory, assistant director of the Department of Public Health Nursing at the University of Toronto, Canada, visited nursing centers in Europe. Visits were arranged for three nurse leaders connected with university schools of nursing in the United States, in order that they might observe methods of teaching and organization being demonstrated in other parts of the country; these persons were Miss Esther M. Andreason, instructor in practical nursing, School of Nursing, University of Minnesota, and Miss Edith M. Baker, instructor in social service, and Miss Claribel A. Wheeler, director of the School of Nursing, Washington University, St. Louis, Missouri.

Fellowships in Nursing

Fellowships in nursing granted by the Foundation are awarded primarily to train leaders and teachers for supervisory and administrative positions in connection with projects to which



Classroom, School of Public Health and Bedside Nursing, Zagreb, Yugoslavia, toward the building and equipping of which the Foundation has contributed.



Group of graduates, students, and guests after the commencement exercises at the State School of Nursing, Warsaw, Poland, 1927. This school was built and equipped with the aid of the Foundation.



Children's Ward, Siriraj Hospital, Bangkok, Siam.



Men's surgical ward, Siriraj Hospital. The Foundation is aiding the Nursing School of the hospital to reorganize its curriculum.

assistance has already been given in the form of either advisory service or financial aid contingent upon a plan of development. Forty-one such fellowships¹ were held during 1927 by nurses on study leave from the following countries: Austria one, Belgium one, Canada five, England three, France five, Hungary three, Japan six, Poland two, Rumania two, Scotland one, United States two, Yugoslavia ten. All of these nurses studied outside their own countries for part of the period of the fellowship grant. The distribution of nurse fellows according to subjects was as follows: public health nursing and its administration seven; maternity nursing one; prenatal, postnatal, and infant welfare work three; obstetrics one; dietetics three; hospital administration, supervision, and organization three; supervision and organization of nurse training eight; nursing education and teaching methods six; ward supervision four; bedside nursing five.

Aid to Schools of Nursing

Pledges have been made during the past few years to encourage governments and local authorities to give increased support for the development of nursing schools in connection with hospitals, public health training centers, or universities in which the Foundation has already

¹ This number does not include five fellowships in nursing granted to persons in China.

become interested through its activities in medical education and public health. Payments have been made along the lines of maintenance of educational features to the Yale University School of Nursing, New Haven, Connecticut; to the D. Ogden Mills Training School for Nurses, Trudeau Sanatorium, Saranac Lake, New York; to the School of Nursing, St. Luke's International Hospital, Tokyo, Japan; to the School of Nursing, Vanderbilt University, Nashville, Tennessee; to the School of Nursing at Belgrade, Yugoslavia; and to the School of Nursing at Siriraj Hospital, Bangkok, Siam. Payments have been made for the development of public health nursing education to the George Peabody College for Teachers, Nashville, Tennessee, and to the Secrétan Dispensary, Paris, France. Contributions have been made for salaries of instructors at the schools of nursing at Lyon, France, and Cracow, Poland. Capital aid was given for building and equipment to the School of Nursing at Budapest, Hungary, to the School of Nursing, University of Debreczen, Hungary, to the State School of Nursing, Warsaw, Poland, and to the School of Public Health and Bedside Nursing, Zagreb, Yugoslavia.

Committee on Grading Schools

An appropriation was made to the Committee on Grading of Nursing Schools in accordance

with an agreement to aid in the maintenance of its work over the five-year period, 1927-1931.

Staff Changes

Miss Mary Beard, assigned to the New York office, and Miss F. Elisabeth Crowell, assigned to the Paris office, have been transferred to the Division of Medical Education from the former Division of Studies.

Miss Ethel Johns who had been a special member of the Division's staff was appointed a regular member with the rank of field director, September 16, 1927. Subsequently, Miss Hazel A. Goff, formerly director of the Red Cross Training School, Sofia, Bulgaria, and Miss Mary E. Tennant, formerly of the field staff of the Metropolitan Life Insurance Company, New York, were also appointed to the staff with the rank of field director. Miss Alice Linton, of the Secrétan Dispensary, Paris, was appointed a special member of the staff.

Miss Margaret Tupper, of the field nursing staff of the Paris office, died suddenly at the American Hospital in Paris, August 18, 1927.

Miscellaneous Activities

With the reorganization of the Rockefeller Foundation, programs in human biology and a few miscellaneous programs have been placed

under the direction of the Division of Medical Education.

Studies of life duration were continued during 1927 at the Johns Hopkins University, and a five-year program of work in human genetics was begun with assistance from the Foundation. Contributions were continued for anthropological studies in Australian universities (through the Australian National Research Council); for studies in race biology in the University of Hawaii; for research in Polynesian ethnology and anthropology at the Bernice P. Bishop Museum in Honolulu, Hawaii; for research at Yale University in the behavior and habits of primates; for research in brain physiology at the State University of Iowa. Assistance was given, through the National Research Council in Washington, to the Union of American Biological Societies for editorial expenses in connection with the publication of *Biological Abstracts*.

Aid was continued to the National Committee for Mental Hygiene in New York for surveys of the care and treatment of mental deficiency and mental disease, for fellowships, and for general expenses of the committee; and to the Canadian National Committee for Mental Hygiene in Toronto for studies in the application of mental hygiene to school children.

Dr. Mikinosuke Miyajima of Keio University, Dr. Chiyomatsu Ishikawa of the Imperial

Fisheries Institute, and Dr. Naohide Yatsu of the Zoological Institute of Tokyo Imperial University, all of Tokyo, Japan, made visits to America as guests of the Foundation in connection with the sciences of human biology. The Foundation aided Tohoku Imperial University, of Sendai, Japan, in obtaining the services of Dr. T. J. LeBlanc of the University of Cincinnati as a visiting professor of biology.

Certain activities of the Committee on Dispensary Development of the United Hospital Fund, supported in the beginning by funds from the Rockefeller Foundation, were in 1927 transferred to permanent agencies through the United Hospital Fund, with an arrangement for contribution by the Foundation for assisting in this transfer over a period of four years.

Preliminary studies of research and teaching in hospital and clinic service were begun in 1927 by Mr. Michael M. Davis, under Foundation auspices.

Payments were made to the New York Academy of Medicine in accordance with a pledge for endowment towards the support of educational opportunities and services for the medical profession; a grant was made to the American Conference on Hospital Service for maintenance and development in 1927 of its Hospital Library and Service Bureau; annual payments were

made on pledges toward the support of a Commission on Medical Education; and to the American Medical Association in connection with the publication and distribution of a Spanish edition of its *Journal*.

**Fellowships in the Biological Sciences, Physics, Chemistry,
and Mathematics**

Ten fellowships in mental hygiene were granted through the National Committee for Mental Hygiene in New York, nine of these for extramural psychiatry and one for psychiatric social work. Four fellowships in anthropology were administered by the Australian National Research Council with funds from the Foundation. Under the National Research Council, Washington, D. C., sixty fellowships were administered in the biological sciences, and in addition thirty fellowships in physics, thirty in chemistry, and twenty-three in mathematics, all with support from the Foundation.

Nineteen fellowships in human biology were administered directly by the Foundation, the fellows coming from the following countries: Australia two, Canada seven, Japan one, New Zealand two, United States seven. Of these, fourteen studied psychology, psychiatry, or related subjects, three anthropology, one genetics and vital statistics, and one neurophysiology

and neuropathology. The studies were carried on in Australia, Canada, England, Germany, the Netherlands, and the United States.

Summary of Activities of the Division in 1927

I. Medical Education

1. Visits and Surveys

Austria	Iraq
Bulgaria	Ireland
China	Italy
Chosen (Korea)	Japan
Denmark	Philippine Islands
Egypt	Rumania
England	Russia
France	Scotland
Germany	Spain
Hongkong	Sudan
Hungary	Syria
Iceland	Venezuela
India	Yugoslavia

2. International Exchange of Information

a. Visits of Teachers or Administrators from

Australia	Japan
Cuba	Scotland
Haiti	Siam

b. Publications

“Methods and Problems of Medical Education”
Series 6, 7, and 8

3. Assistance in Improvement of Teaching and Research

a. Support of 111 fellowships for study in foreign countries

Argentina 1	Latvia 3
Austria 3	Lithuania 1

Belgium 1	Mexico 1
Brazil 4	Netherlands 1
Canada 8	Norway 2
Denmark 1	Peru 1
England 1	Philippine Islands 2
Estonia 2	Poland 4
France 4	Rumania 10
Germany 7	Scotland 1
Haiti 8	Siam 7
Hongkong 2	South Africa 1
Hungary 6	Sweden 2
India 1	Syria 3
Italy 7	Turkey 2
Japan 10	Yugoslavia 4

- b. Support of 48 local fellowships in Germany
- c. Support of 14 fellows appointed by the British Medical Research Council
- d. Support of 45 fellows appointed by the National Research Council, Washington, D. C.
- e. Temporary aid to improve departments of medical schools

France	Italy (<i>continued</i>)
Lyon	Milan
Paris	Naples
Strasbourg	Padua
Italy	Pavia
Bologna	Rome
Florence	Turin
Genoa	

- f. Laboratory supplies

Austria	Italy
Belgium	Lithuania
Brazil	Rumania
Bulgaria	Siam
England	Sweden
Germany	Yugoslavia

g. Medical literature

Austria	Latvia
Belgium	Lithuania
Bulgaria	Poland
Czechoslovakia	Portugal
Estonia	Rumania
Finland	Russia
France	Siam
Germany	Switzerland
Hungary	Turkey
Italy	Yugoslavia

4. Cooperative Aid to Medical Institutions

Chulalongkorn University, Bangkok, Siam
 American University of Beirut, Syria
 Free University of Brussels
 University of Cambridge
 University of Edinburgh
 Harvard School of Public Health
 State University of Iowa
 University College, London
 London Hospital Medical College
 University of Lyon, France
 University of Montreal, Canada
 Institute for Psychiatric Research, Munich, Germany
 National School of Medicine and Pharmacy, Port-au-Prince, Haiti
 Faculty of Medicine, São Paulo, Brazil
 University of Strasbourg, France
 Keio University, Tokyo, Japan
 University of Zagreb, Yugoslavia

II. Medical Education in China**1. Fellowships**

- a. For study in the United States and Europe (47)
 Chinese 29
 Americans and Europeans 18

- b. For study in the Peking Union Medical College (80)
- | | |
|-------------------------|----|
| Chinese | 47 |
| Americans and Europeans | 33 |

2. Aid to Colleges and Universities for the Premedical Sciences

College of Yale-in-China, Changsha
 Fukien Christian University, Foochow
 Ginling College, Nanking
 Lingnan University, Canton
 Nankai College, Tientsin
 Nanking University, Nanking
 National Southeastern University, Nanking
 St. John's University, Shanghai
 Shanghai College, Shanghai
 Shantung Christian University, Tsinan
 Soochow University, Soochow
 Tsing Hua College, Peking
 Yenching (Peking) University, Peking

3. Maintenance of Peking Union Medical College

4. Aid to Medical Schools

Hsiang-Ya Medical School
 Shanghai Union Medical College
 Shantung Christian University

5. Aid to Hospitals

Tehchow and Fenchow Hospitals, American Board of Commissioners for Foreign Missions
 Luchowfu and Nantungchow Hospitals, United Christian Missionary Society
 Sleeper Davis Memorial Hospital, Woman's Foreign Mission Society of the Methodist Episcopal Church (cooperating with the School of Nursing of the Peking Union Medical College)
 Peking and Wuhu Hospitals, Board of Foreign Missions of the Methodist Episcopal Church

Soochow Hospital, Board of Missions of the Methodist Episcopal Church, South
Huchow Hospital, Board of Missions, Methodist Episcopal Church, South, and American Baptist Foreign Mission Society, jointly
Changteh, Chefoo, Hwaiyuen, and Paotingfu Hospitals, Board of Foreign Missions of the Presbyterian Church in the United States
Ichang Hospital, Church of Scotland Foreign Mission Committee
Anking Hospital, Domestic and Foreign Missionary Society of the Protestant Episcopal Church in the United States
Siaochang Hospital, London Missionary Society
Yangchow Hospital, Foreign Mission Board of the Southern Baptist Convention
Nanking University Hospital
Amoy Hospitals, Board of Foreign Missions of the Reformed Church in America

6. Other Activities in China

- a. Emergency aid to wounded soldiers in Hankow
- b. Aid toward anthropological research at Chou Kou Tien under the Department of Anatomy of the Peking Union Medical College
- c. Grant to Church General Hospital, Wuchang
- d. Grant to St. Luke's Hospital, Shanghai, for equipment for the eye department
- e. Special study of Peking Union Medical College by Dr. David L. Edsall
- f. Aid to China Medical Association

III. Nursing Education

1. Surveys and Visits

Austria

France

Belgium	Germany
Bulgaria	Hungary
Canada	Poland
Czechoslovakia	Turkey
England	United States
Yugoslavia	

2. International Exchange of Information

a. Visits of teachers and administrators from

Austria	Hungary
Canada	Japan
England	Rumania
France	United States

b. Support of foreign fellows from

Austria	Japan
Belgium	Poland
Canada	Rumania
England	Scotland
France	United States
Hungary	Yugoslavia

3. Aid to Schools of Nursing

a. For maintenance of educational features

Yale University School of Nursing, New Haven, Connecticut

D. Ogden Mills Training School for Nurses, Trudeau Sanatorium, Saranac Lake, New York

St. Luke's International Hospital, School of Nursing, Tokyo, Japan

School of Nursing, Vanderbilt University, Nashville, Tennessee

School of Nursing, Belgrade, Yugoslavia

School of Nursing, Siriraj Hospital, Bangkok, Siam

George Peabody College for Teachers, Nashville, Tennessee

Secrétan Dispensary, Paris, France

School for Nurses, University of Lyon, France

School of Public Health and Bedside Nursing, University of Cracow, Poland

b. For building and equipment

School of Nursing, Budapest, Hungary

School of Nursing, Debreczen, Hungary

State School of Nursing, Warsaw, Poland

School of Public Health and Bedside Nursing, Zagreb, Yugoslavia

4. Aid to Committee on Grading of Nursing Schools, New York City

IV. Miscellaneous Activities

1. Aid for Biological Education and Research

The Johns Hopkins University, Baltimore, Maryland

Australian National Research Council, Sydney, Australia

University of Hawaii, Honolulu, Hawaii

Bernice P. Bishop Museum, Honolulu, Hawaii

Yale University, New Haven, Connecticut

State University of Iowa, Iowa City, Iowa

Support for publication of *Biological Abstracts*

Tohoku Imperial University, Sendai, Japan

National Committee for Mental Hygiene, New York City

Canadian National Committee for Mental Hygiene

2. Assistance to Other Agencies

Commission on Medical Education

Spanish edition of the *Journal of the American Medical Association*

Research and teaching in hospital and clinic service

United Hospital Fund

Hospital Library and Service Bureau

New York Academy of Medicine

3. Fellowships

a. Administered by the Rockefeller Foundation

Human biology (19)

Australia

Canada	7
Japan	1
New Zealand	2
United States	7
b. Administered by Other Agencies	
National Committee for Mental Hygiene, New York City	10
Australian National Research Council (anthropology)	4
National Research Council, Washington	
In biological sciences	60
In physics	30
In chemistry	30
In mathematics	23

APPENDIX

I

Tables of Contents for Series 6, 7, and 8 of Methods and Problems of Medical Education Sixth Series

- Peking Union Medical College Libraries, Peking, China, by MARGUERITE E. CAMPBELL
- Library of the Medical School, Harvard Medical School, Boston, Massachusetts, by ELLIOTT P. JOSLIN and FRANCES N. A. WHITMAN
- Library of the Medical School, Medical School of São Paulo, São Paulo, Brazil, by ROBERT A. LAMBERT
- Library of the Medical School, Washington University, St. Louis, Missouri, by ELLA B. LAWRENCE
- Medical Section of the Library, Queens University, Kingston, Ontario, by NATHAN VAN PATTEN
- Library of School of Medicine, McGill University, Montreal, Canada, by C. F. WYLDE
- Pathological Museum, University College Hospital Medical School, London, England, by A. E. BOYCOTT
- Darling Building for the Biological and Medical Sciences, University of Adelaide, Adelaide, Australia, by T. BRAILSFORD ROBERTSON and WALTER H. BAGOT
- Department of Anatomy, The Queen's University, Belfast, Ireland, by THOMAS WALMSLEY
- School of Anatomy, Trinity College, Dublin University, Dublin, Ireland, by FRANCIS DIXON
- Institute of Normal Anatomy, University of Milan, Milan, Italy, by F. LIVINI
- Institute of Pathological Anatomy, University of Copenhagen, Copenhagen, Denmark, by JOHANNES FIBIGER
- Institute of General Pathology, University of Copenhagen, Copenhagen, Denmark, by OLUF THOMSEN
- Department of Biochemistry, School of Medicine, Tulane University, New Orleans, Louisiana, by WILLEY DENIS
- Die Lehrkanzel für Embryologie an der Universität in Wien, Vienna, Austria, von A. FISCHER
- Institute of Physiology, University of Louvain, Louvain, Belgium, by A. K. NOYONS
- Plans for the Institute of Physiotherapeutics, University of Jena, Jena, Germany, by J. GROBER and R. RIEMERSCHMID
- The Rotunda Hospital, Dublin, Ireland, by GIBBON FITZGIBBON
- Dermatological Clinic, Royal Hungarian University, Budapest, Hungary, by LUDWIG A. NEKAM

- Institute of Tropical Medicine, Leyden, Netherlands, by P. C. FLU
 Institute of Phototherapy, Florence, Italy, by CELSO PELLIZZARRI
 Psychiatric and Neurologic Clinic, Amsterdam, Netherlands, by L. BOU-
 MAN
 Die Interakademische Hirnforschungsanstalt, Psychiatrisch-Neurolo-
 gische Universitätsklinik, Budapest, Hungary, von KARL SCHAFER
 Public Health Clinic, Dalhousie University, Halifax, N. S., by W. H.
 HATTIE
 Institute of Hygiene, University of Cluj, Cluj, Rumania, by IULIU
 MOLDOVAN
 Attendance of City's Sick Poor as Part of Clinical Instruction at the
 Medical Department, University of Georgia, Augusta, Georgia, by
 W. H. GOODRICH and V. P. SYDENSTRICKER
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- Department of Medicine, St. Bartholomew's Hospital, University of London, London, England, by FRANCIS R. FRASER
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University Eye Hospital, Hungarian Royal Elisabeth University, Pécs,
Hungary, by JOSEPH IMRE

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articles is made gratis upon request to the Rockefeller Foundation.

II

Peking Union Medical College Peking, China

RECEIPTS AND EXPENDITURES FOR THE ACADEMIC YEAR
ENDING JUNE 30, 1927

RECEIPTS

LOCAL INCOME

General

Rentals	Mex. \$39,771.23	
Tuition, graduate students	3,245.71	
Tuition, students	6,032.50	
Tuition, pupil nurses	805.00	
Board and room, students	5,162.40	Mex. \$55,016.84

Hospital

First-class patients	28,157.00	
Second-class patients	29,313.05	
Third-class patients	15,639.71	
Professional services	42,674.51	
X-ray fees	11,393.25	
Laboratory fees	831.00	
Outpatient fees	12,012.71	
Operating-room fees	3,691.50	
Hire of ambulance	910.00	
Charges for use of radium	1,597.37	
Physiotherapy fees	984.00	147,204.10

Miscellaneous

Sale of electricity	2,519.73	
Sale of gas	856.66	
Sundry items	1,762.63	5,139.02

Mex. \$207,359.96

Less provision for uncollect- able hospital fees	1,000.00
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Total Local Income Mex. \$206,359.96

RECEIVED FROM ROCKEFELLER FOUNDATION

1,569,915.55

TOTAL RECEIPTS UNDER PEKING ADMINISTRATION

Mex. \$1,776,275.51

EXPENDITURES

	SALARIES	OTHER EXPENSES	TOTAL
	<i>Mex.</i>	<i>Mex.</i>	<i>Mex.</i>
GENERAL OFFICE			
Administration	\$120,932.75	\$21,357.09	\$142,289.84
Library	6,528.23	14,413.09	20,941.32
College Health Service	20,815.27	4,969.00	25,784.27
Publications		4,000.00	4,000.00
Travel abroad		156,000.00	156,000.00
Travel in the Orient		7,048.00	7,048.00
Language study		1,331.00	1,331.00
Schools for foreign children		5,000.00	5,000.00
Group insurance and retiring allowances		32,016.79	32,016.79
Totals	\$148,276.25	\$246,134.97	\$394,411.22
PHYSICAL PLANT			
Mechanical department	\$52,573.14	\$148,127.33	\$200,700.47
Building and grounds	36,385.40	13,668.59	50,053.99
Totals	\$88,958.54	\$161,795.92	\$250,754.46
HOSPITAL			
Administration	\$55,059.47	\$11,140.08	\$66,199.55
Resident staff	25,619.12		25,619.12
Medical and surgical supplies		20,000.00	20,000.00
Roentgenological supplies		10,260.17	10,260.17
Drugs		23,159.13	23,159.13
Replacements, medical and surgical equipment		1,444.00	1,444.00
Nursing services	104,136.00		104,136.00
Physiotherapy	6,082.00		6,082.00
Dietary department	20,714.35	73,447.82	94,162.17
Nurses' home	5,429.00	8,332.96	13,761.96
Matron's department	6,873.13	16,795.12	23,668.25
Laundry	5,684.31	4,647.00	10,331.31
Pharmacy	13,038.34		13,038.34
Convalescent hostel	264.00	1,969.75	2,233.75
Totals	\$242,899.72	\$171,196.03	\$414,095.75
MEDICAL SCHOOL			
Administration	\$9,312.15	\$494.75	\$9,806.90
Central illustration bureau	1,190.00		1,190.00
Departments			
Anatomy	40,881.04	5,000.00	45,881.04
Physiology	24,068.67	4,920.00	28,988.67

	SALARIES	OTHER EXPENSES	TOTAL
	<i>Mex.</i>	<i>Mex.</i>	<i>Mex.</i>
MEDICAL SCHOOL (<i>Continued</i>)			
Departments (<i>Continued</i>)			
Pharmacology	\$25,136.25	\$4,000.00	\$29,136.25
Biochemistry	18,023.48	3,988.86	22,012.34
Pathology	79,157.32	13,611.91	92,769.23
Hygiene and public health	26,554.52	7,963.00	34,517.52
Medicine	152,040.29	10,400.00	162,440.29
Neurology	27,723.61	2,590.00	30,313.61
Surgery	58,137.15	2,133.97	60,271.12
Gynecology and obstet- rics	28,738.62	1,000.00	29,738.62
Otolaryngology	27,240.00	850.00	28,090.00
Ophthalmology	36,356.00	990.00	37,346.00
Roentgenology	23,471.03	4,202.00	27,673.03
Department of languages	6,785.16	96.61	6,881.77
Clinical laboratory	5,964.66	2,132.53	8,097.19
Totals	\$590,779.95	\$64,373.63	\$655,153.58
PREMEDICAL SCHOOL Personnel	\$2,858.33		\$2,858.33
SCHOOL OF NURSING	\$15,540.07	\$2,159.43	\$17,699.50
DEPARTMENT OF RELIGIOUS AND SOCIAL WORK	\$10,916.04	\$1,946.00	\$12,862.04
STUDENT HALLS	\$4,372.98	\$15,264.25	\$19,637.23
EXTRAORDINARY EXPENSES (new equipment, etc.)		\$9,287.75	\$9,287.75
Totals	\$1,104,601.88	\$672,157.98	\$1,776,759.86
CONTINGENT ITEMS			Cr. \$484.35
TOTAL EXPENDITURES UNDER PEKING ADMINISTRATION		Mex. \$1,776,275.51	

SUMMARY OF NET COST
YEAR ENDING JUNE 30, 1927

	<i>Chinese Currency</i>	<i>United States Currency</i>
Net expenditure under regular budget Mex.	\$1,569,915.55	\$768,362.77
Expenses of trustees' office in the United States (purchasing agency, etc.)		\$57,937.75
TOTAL NET EXPENDITURES		\$826,300.52

STAFF OF THE DIVISION OF MEDICAL EDUCATION DURING 1927

RICHARD M. PEARCE, M.D., *Director*

ASSOCIATE DIRECTORS

Alan Gregg, M.D. William S. Carter, M.D.
Henry S. Houghton, M.D.

ASSISTANT DIRECTORS

Francis W. O'Connor, M.D. F. Elisabeth Crowell
Daniel P. O'Brien, M.D. Mary Beard

FIELD DIRECTORS

N. Gist Gee Ethel C. Johns
Hazel A. Goff Margaret Tupper¹

SPECIAL MEMBERS

Alice Linton E. F. Zinn²

ASSISTANT

Margery K. Eggleston

¹ Died August 18, 1927.

² Resigned.

THE ROCKEFELLER FOUNDATION
Report of the Treasurer

To the President of the Rockefeller Foundation:
Sir:

I have the honor to submit herewith my report of the financial operations of the Rockefeller Foundation and its subsidiary organizations for the period January 1, 1927, to December 31, 1927.

Respectfully yours,

L. G. MYERS

Treasurer

TREASURER'S REPORT

The following table summarizes transactions relating to income, disbursements, and appropriations:

Income from General		
Fund.....	\$9,221,986.21	
Gift from Mr. John D.		
Rockefeller.....	109,856.40	
Amount transferred from		
General Fund.....	3,000,000.00	
Interest on \$10,000 re-		
turned by the Execu-		
tors of the Estate of		
Laura S. Rockefeller. .	60.27	\$12,331,902.88
<hr/>		
Undisbursed income on hand January 1,		
1927.....		6,076,682.71
Sundry refunds.....		21,964.80
<hr/>		
Total amount available for disbursement		\$18,430,550.39
Disbursements on account of appropri-		
ations.....		11,223,123.79
<hr/>		
Balance of income undisbursed on De-		
cember 31, 1927.....		\$7,207,426.60
Unpaid appropriations and commitments		
effective in 1927 and prior years.....		4,961,905.47
<hr/>		
Balance in income account available for		
appropriation.....		<u>\$2,245,521.13</u>

Appropriations and pledges effective in 1928 and following years, amounting to \$15,584,928, as shown in the annexed balance sheet, are not provided for in the foregoing figures but are considered as charges against the income of the years in which they fall due.

Income invested in land, buildings, and equipment was increased during the year by the net sum of \$305,172.72, as shown in Exhibit H, on page 349 making a total to date of \$9,344,666.12.

On April 23, 1927, the sum of \$10,060.27 was received from the Executors of the Estate of Laura^W Spelman Rockefeller, who refused to accept the payment of \$10,000 made December 31, 1926, ^Funder a resolution of the Board dated November 5, 1926. In returning the original amount, \$60.27 accumulated interest was included. In accordance with a resolution of the Executive Committee, dated May 13, 1927, \$10,000 of this sum was credited to Principal and \$60.27 to General Income.

Since the close of the year the accounts of the Comptroller, the accounts of the Treasurer, and the securities owned by the Corporation have been examined by Arthur Young and Company, accountants, who have rendered a report to the Chairman.

The financial condition and operations are set forth in the appended exhibits, which are listed below:

Balance Sheet	Exhibit A
Statement of Receipts and Disbursements of Income	Exhibit B
Foundation's Appropriations	
Central Administration	Exhibit C
Division of Medical Education	Exhibit D
International Health Division	Exhibit E
Summary of Appropriations and Pay- ments	Exhibit F
Statements of Principal Funds	Exhibit G
Land, Buildings, and Equipment Funds . .	Exhibit H
Schedule of Securities in General Fund . .	Exhibit I

EXHIBIT A

BALANCE SHEET—DECEMBER 31, 1927

ASSETS

I. INVESTMENTS		
General Fund		
General schedule (Exhibit I)		\$143,105,057.83
Secured demand loans		19,186,566.67
		<u>\$162,291,624.50</u>
II. LAND, BUILDINGS, AND EQUIPMENT (Exhibit H)		
In New York	\$52,461.30	
In Paris	68,000.00	
In China	9,224,204.82	
		<u>\$9,344,666.12</u>
III. INCOME ACCOUNTS		
General Fund		
Cash on deposit in New York	\$117,191.74	
Secured demand loans	3,363,433.33	
		<u>\$3,480,625.07</u>
Foreign currencies		
Milreis	\$156,199.69	
Belgian francs	283,085.32	
Czechoslovakian kronen	211,483.16	
Sterling	109,302.75	
		<u>760,070.92</u>
Funds in hands of agents, to be accounted for, and sundry accounts receivable	\$3,012,310.78	
Less accounts payable	45,580.17	
		<u>2,966,730.61</u>
TOTAL		<u>\$7,207,426.60</u>
Excess of appropriations and pledges over income available		13,339,406.87
		<u>\$20,546,833.47</u>
GRAND TOTAL		<u>\$192,183,124.09</u>

TREASURER'S REPORT

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EXHIBIT A

BALANCE SHEET—DECEMBER 31, 1927

FUNDS AND OBLIGATIONS

I. FUNDS

General Fund (Exhibit G)	\$162,291,624.50
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II. LAND, BUILDINGS, AND EQUIPMENT FUND

Appropriations from income (Exhibit H)	\$9,344,666.12
--	----------------

III. INCOME ACCOUNTS

General Fund

Balance due on appropriations payable in 1927 and prior years (Exhibit F)	\$4,961,905.47
--	----------------

Appropriations and pledges effective in 1928
and following years (Exhibit F):

1928	\$8,798,377.00
1929	4,066,378.00
1930	2,004,938.00
1931	319,217.00
1932	208,775.00
1933	106,285.00
1934	80,958.00

15,584,928.00

\$20,546,833.47*

GRAND TOTAL	\$192,183,124.09
-------------------	------------------

*This total of all unpaid appropriations and pledges is \$13,339,406.87 in excess of the balance of general fund income amounting to \$7,207,426.60, as shown on opposite page, but it will be noted that these obligations become effective over a term of years, thus permitting their satisfaction gradually as the income of the respective years is received.

EXHIBIT B STATEMENT OF RECEIPTS AND DISBURSEMENTS OF INCOME

GENERAL FUND

RECEIPTS

Balance, December 31, 1926.....	\$6,076,682.71
Refunds of payments made in prior years.....	21,964.80
	<hr/>
Income for the year.....	\$9,221,986.21
Gift of Mr. John D. Rockefeller of April 4, 1927, credited to income.....	109,856.40
Part of sum received from Executors of Estate of Laura Spelman Rockefeller, credited to income.....	60.27
Amount transferred from General Fund in accordance with a resolution of the members of the Foundation.....	3,000,000.00
	<hr/>
	12,331,902.88
	<hr/>
	\$18,430,550.39

DISBURSEMENTS

CENTRAL ADMINISTRATION	
General Budget	
Maintenance of New York, European, and Far Eastern offices.....	\$625,516.47
Emergency fund, China.....	715.31
	<hr/>
	\$626,231.78
Capital Requirements	
University of London toward purchase of Bedford site.....	1,943,005.00
	<hr/>
	\$2,569,236.78

INTERNATIONAL HEALTH DIVISION

General Budget		
Hookworm work.....		\$163,691.61
Malaria work.....		181,475.18
Yellow fever work.....		366,855.29
County health work.....		256,063.90
State health services		
Development of essential divisions		
Epidemiology.....	\$15,209.02	
Vital statistics.....	11,291.97	
Sanitary engineering.....	6,442.21	
Public health laboratories.....	31,812.47	
Public health nursing.....	20,581.77	
Other services.....	904.22	
Bureaus for study and reform of public health activities.....		86,241.66
Health Organization of League of Nations.....		18,503.93
Public health education		146,347.78
Fellowships, training of health workers, and aid to schools of hygiene.....		348,109.40
Field studies and surveys.....		1,035.25
Miscellaneous.....		15,115.82
Field service.....		683,881.86
		<u>\$2,267,321.68</u>
Capital Requirements		
Toward buildings, equipment, or endowment		
Schools of hygiene and public health.....		\$1,289,512.06
Schools of nursing.....		99,334.48
School for native medical assistants, Suva, Fiji.....		4,800.00
		<u>1,393,646.54</u>

EXHIBIT B—*Continued*

DIVISION OF MEDICAL EDUCATION		
General Budget		
Medical education		
Medical schools	\$245,684.37	
Peking Union Medical College (Operation Nov. 1, 1926, to Oct. 31, 1927)	780,076.08	
Premedical schools	40,034.18	
Miscellaneous	51,115.51	
Nursing education	143,881.66	
Aid to hospitals in China	48,779.06	
Hospital and dispensary service	66,265.31	
Human biology	208,286.93	
Fellowships	532,755.85	
Field service	71,419.19	
	<u>\$2,188,298.14</u>	
Capital Requirements		
Toward buildings, equipment, or endowment		
Medical Education		
Medical schools	\$2,075,269.03	
Peking Union Medical College	532,451.98	
Premedical schools	31,519.56	
Schools of hygiene and public health	124,750.00	
Nursing education	26,105.08	
Hospitals in China	3,525.00	
Human biology	11,000.00	
	<u>2,804,620.65</u>	
	<u>\$4,992,918.79</u>	\$11,223,123.79
Income on hand December 31, 1927, accounted for in balance sheet		<u>\$7,207,426.60</u>

1927 FOUNDATION APPROPRIATIONS
UNPAID BALANCES OF APPROPRIATIONS MADE IN PRIOR YEARS
AND PAYMENTS THEREON MADE IN 1927

EXHIBIT C

CENTRAL ADMINISTRATION

TREASURER'S REPORT

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	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET			
Administration			
Executive offices			
(RF 21014, 21021, 21139, ME 21080, 21141, DS 21084, 21142, CA 21181, IH 22873, 23377, CM 2739, 2772)*	\$33,392.99	\$488,208.00	\$460,285.52
Paris office			
(RF 21143, 21155-56, IH 23375, 23384, CA 21018, 21170)	79,669.69	96,630.00	47,694.33
Paris office. Permanent improvements and fixtures (CA 21151)		12,000.00	
Peking office			
(CM 2742, 2775)	12,960.25	24,900.00	25,446.43
Treasurer's office			
(RF 2894, 21140, 21163, CA 21179)	4,335.57	21,346.00	18,570.00
Asset Accounts			
Furniture and fixtures (RF 21146)		4,000.00	3,682.53
Books for the library (RF 21146)		1,100.00	1,038.21
Part interest in building occupied by Paris office (RF 21151)	68,000.00		68,000.00

* The figures in parentheses, following the text describing the purpose of each appropriation, are the serial numbers of the resolution of the division or executive committee authorizing the payment.

EXHIBIT C—*Continued*General Budget—*Continued*

Miscellaneous			
China emergency fund (CA 21169)	\$.....	\$50,000.00	\$715.31
Rotating funds for Foundation's various offices (RF 2824)	5,000.00		
Fellowships. Contingent fund for sick care and special emergencies in connection with holders of direct fellowships (RF 2824, 21041, 21162)	811.66	2,000.00	799.45
War Relief Commission Administration 1917 (RF 2216)	644.75		
Unexpended balances of appropriations allowed to lapse	\$204,814.91	\$700,184.00	\$626,231.78
	101,660.69		
TOTALS: GENERAL BUDGET	\$103,154.22	\$700,184.00	\$626,231.78
CAPITAL REQUIREMENTS			
University of London			
Toward purchase of Bedford site (CA 21171)	\$.....	\$1,995,000.00	\$1,943,005.00
Unexpended balance of appropriation allowed to lapse		51,995.00	
TOTALS: CAPITAL REQUIREMENTS	\$.....	\$1,943,005.00	\$1,943,005.00
TOTALS: CENTRAL ADMINISTRATION	\$103,154.22	\$2,643,189.00	\$2,569,236.78

1927 FOUNDATION APPROPRIATIONS
UNPAID BALANCES OF APPROPRIATIONS MADE IN PRIOR YEARS
AND PAYMENTS THEREON MADE IN 1927

EXHIBIT D

DIVISION OF MEDICAL EDUCATION

TREASURER'S REPORT

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GENERAL BUDGET	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
Medical Schools			
Brazil			
Faculty of Medicine, São Paulo			
Laboratory aid: scientific equipment and supplies (ME 21050, 21092) .	\$1,072.31	\$5,000.00	\$896.45
China			
Hsiangya Medical College (Changsha)			
Maintenance (CM 2754)			
1926-27 Mex. 80,000 .	45,000.00	48,000.00	39,601.78
1927-28 Mex. 80,000 .			
Shantung Christian University			
Maintenance (CM 2694)			
Balance of prior instalments .	36,613.71	28,000.00	21,682.50
Instalment for 1927 .			
St. John's University			
Expenses in connection with transfer of students from Hsiangya			
Medical College during year 1927-28 Mex. 20,000 (ME 21186) .		12,000.00	4,576.51
Emergency Fund			
For aid of medical work in China at the discretion of the Associate			
Director (CM 2738, 2771) .	645.79	1,000.00	1,137.03

EXHIBIT D—*Continued*GENERAL BUDGET—*Continued*
Medical Schools—*Continued*

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
Great Britain			
University of Edinburgh			
Toward development of clinical teaching in its medical school (ME 21056, 21085).....	\$9,500.07	\$8,000.00	\$8,494.06
Europe			
Medical literature aid			
Supplying medical journals to medical institutions in Europe (ME 2973, 21089, 21153).....	7,289.55	25,000.00	26,621.39
Laboratory aid. Equipment and supplies (ME 2862, 2974, 21091).. Developmental aid	99,365.99	35,000.00	27,653.59
Constructive program of aid to medical education without capital expenditure (ME 2977, 21094).....	28,925.94	50,000.00	31,916.01
Emergency program			
Resident fellows (and scholars) in Germany (ME 2975, 21090)	2,373.34	30,000.00	10,794.14
Emergency assistance to laboratories (ME 2725).....	36,885.29	.....	.....
Siam			
Chulalongkorn University Medical School			
Toward salaries and travel of foreign professors (ME 2754, 21077, 21086).....	5,701.32	27,000.00	24,586.79
Library aid (ME 21148).....	6,150.00	.....	4,374.91
Laboratory aid: equipment and supplies for medical and premedical schools (ME 21054, 21093).....	4,947.08	5,000.00	3,349.21
Syria			
American University of Beirut			
Maintenance and equipment (ME 21088).....	35,000.00	35,000.00
Support of health center (ME 21187).....	5,000.00	5,000.00

TREASURER'S REPORT

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Peking Union Medical College				
Maintenance in China		\$440,000.00	\$466,507.23	
Year 1926-27 (CM 2753, 2760)		440,000.00	234,432.47	
Year 1927-28 (CM 21180)		63,292.00	58,578.93	
Expenses in the United States (CM 2740, 2773, 2777, ME 21251)			Cr. 64.57	
Insurance on buildings and plate glass (CM 2684, 2697, 2731)				
Diet investigation (CM 2539)		299.07		
Field studies in kala-azar (CM 2733)		981.09		
Special field study in anthropology (CM 2778)		13,628.03	9,415.15	
Special study of the college (CM 2776)		13,000.00	5,224.54	
Student loan fund (CM 2758)		6,500.00	5,982.33	
Premedical Schools		1,200.00		
Chulalongkorn University				
Salary and travel of visiting professors (ME 21078, 21087)		1,326.40	12,678.84	
Fukien Christian University				
Maintenance (CM 2274-76)		22,700.00	1,982.59	
Ginling College. Maintenance (CM 2721)		4,950.00		
Lingnan University. Maintenance (CM 2761)		805.00		
Nankai University. Maintenance (CM 2734)		467.43		
Nanking University. Support of visiting professor for one year (CM 2683)				
National Southeastern University. Maintenance (CM 2720, 2762)		2,160.00	22.90	
Peking (Yenching) University. Maintenance (CM 2717)		2,032.38		
St. John's University. Maintenance (CM 2679)		16,350.72	13,235.36	
Shanghai College. Maintenance (CM 2688)		5,040.00	3,228.75	
Shantung Christian University. Support of additional staff (CM 2729)		2,133.75		
Soochow University. Maintenance (CM 2674)		7,200.00		
Tsing Hua College. Maintenance (CM 2749)		4,000.00		
Yale-in-China		600.00	452.57	
Maintenance (CM 2755) Instalment 1926-27 Mex.		7,700.00	6,462.97	

EXHIBIT D—*Continued*

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET— <i>Continued</i>			
Premedical Schools— <i>Continued</i>			
Council on Health Education			
For carrying out a special campaign among the middle schools and colleges of China concerning the value and possibilities of scientific medicine (CM 2643)	\$7,500.00	\$2,500.00	\$1,975.10
Expenses of biological supply service (CM 2690)	4,149.30		Cr. 4.90
Miscellaneous. Medical Education			
Commission on Medical Education			
Toward study of the medical curriculum in America (ME 21101)		10,000.00	10,000.00
American Medical Association			
Toward loss in publishing a Spanish edition of its <i>Journal</i> (ME 21099, 21100)		15,000.00	9,638.93
China Medical Association. Toward current expenses (CM 2770)		6,000.00	4,653.38
Chulalongkorn University			
Travel of delegates to a congress of the Far Eastern Association of Tropical Medicine in Calcutta (ME 21202)		1,000.00	199.48
Travel of visiting scientists (ME 2925, 2933, 2978, 21095)	18,931.20	15,000.00	11,659.73
Survey of medical education in Venezuela (ME 21069)	250.00		200.00
Bulletins and reprints (ME 21079, 21200)	26.79	20,000.00	14,763.99
Schools of Hygiene and Public Health			
Yugoslavia			
University of Zagreb, Department of Hygiene. Equipment and maintenance (ME 21198)		5,000.00	
Nursing Education			
Europe			
Travel of European leaders within Europe (ME 21073, 21183)	1,235.17	3,500.00	1,920.51

TREASURER'S REPORT

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France				
Aid to nursing centers at Paris, Lyon, Nancy (ME 2987, 21119)	\$4,119.62	\$5,000.00	\$3,154.15	
Maintenance of training center at Secrétan Dispensary (ME 2988, 21122)				
Hungary				
Budapest School of Nursing. Maintenance (ME 21120)	8,153.85	10,000.00	7,566.59	
School of Nursing, University of Debreczen. Maintenance (ME 21197)		10,000.00		
Poland		2,000.00		
University of Cracow, School of Public Health and Bedside Nursing				
Balance of \$35,000 appropriated for salaries and scholarships during five-year period ending 12/31/29 (ME 2927)	31,115.49		5,744.31	
Yugoslavia				
School of Public Health and Bedside Nursing, Zagreb				
Balance of \$5,250 appropriated for scholarships and salary of an assistant during a three-year period ending 12/31/27	1,015.54	750.00		
Belgrade School of Nursing				
Resident scholarships and development of teaching facilities (ME 2908)	2,805.76		1,716.39	
Japan				
St. Luke's International Hospital, Tokyo				
For educational features of the school of nursing (ME 21080, 21129)	2,500.00	10,000.00	12,500.00	
Siam				
Nurses' Training School of Siriraj Hospital, Bangkok				
Travel and supplementary salaries (ME 21047, 21128)	2,164.80	6,500.00	6,909.20	
Scientific books and equipment (ME 21059)	654.74		117.83	
United States				
George Peabody College for Teachers				
Education in public health nursing (ME 21125)		8,000.00	8,000.00	
Vanderbilt University				
Educational features of school of nursing (ME 21123)		20,000.00	20,000.00	
Nurse training courses (ME 21043, 21124)	7,000.00	7,000.00		

EXHIBIT D—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Nursing Education—Continued			
United States—Continued			
Yale University School of Nursing		\$50,000.00	\$21,047.00
Equipment, supplies, and incidentals (ME 2721, 21174)	\$10,891.44	42,500.00	42,500.00
Maintenance of educational features (ME 21127) . . . . .	.....	5,000.00	5,000.00
D. Ogden Mills Training School for Nurses. Maintenance (ME 21126)	.....	
Committee on Grading of Nursing Schools			
General expenses (ME 21188) . . . . .	.....	5,000.00	5,000.00
Travel of visiting nurses (ME 2994, 21131)	3,465.20	5,000.00	2,705.68
Aid to Hospitals in China			
American Baptist Foreign Mission Society			
Ningpo. Support of additional staff (CM 276)	11,250.00	.....	.....
Shaohsing. Support of additional staff (CM 277)	6,000.00	.....	.....
American Baptist Foreign Missionary Society and the Board of Missions			
of the Methodist Episcopal Church, South, jointly			
Huchow. Maintenance (CM 2752)	1,800.00	1,500.00	1,800.00
American Board of Commissioners for Foreign Missions			
Fenchow			
Support of additional staff (CM 2519)	6,653.43	.....	2,494.93
Maintenance (CM 2520, 2757)	5,206.25	2,200.00	1,121.88
Tehchow			
Support of additional staff (CM 2498)	8,000.00	.....	1,812.06
Maintenance (CM 2571, 2784)	4,621.00	2,500.00	2,310.50
Board of Foreign Missions of the Methodist Episcopal Church			
Peking. Maintenance (CM 2675)	2,000.00	1,000.00
Wuhu. Maintenance (CM 2718)	3,900.00	4,650.00	3,900.00

TREASURER'S REPORT

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Board of Foreign Missions of the Presbyterian Church in the United States			
Changteh. Maintenance (CM 2604).....	\$7,500.00	\$3,750.00	\$3,750.00
Chefoo. Maintenance (CM 2603).....	7,500.00	3,750.00	3,750.00
Hwaiyuen. Maintenance (CM 2699).....	6,750.00	3,000.00	3,375.00
Paotingfu. Maintenance (CM 2572, 2779).....	9,000.00	4,687.50	4,500.00
Board of Foreign Missions of the Reformed Church in America			
Amoy. Support of additional staff (CM 2283).....	9,405.00	.....	.....
Board of Missions of the Methodist Episcopal Church, South			
Sochow. Maintenance (CM 2418, 2764).....	9,940.00	4,400.00	4,180.00
Church of Scotland Foreign Mission Committee			
Ichang			
Support of additional staff (CM 289).....	7,500.00	.....	.....
Maintenance (CM 2719).....	1,325.00	500.00	675.00
Domestic and Foreign Mission Society of the Protestant Episcopal Church in the United States			
Anking. Maintenance (CM 2701).....	1,000.00	1,000.00	1,000.00
Foreign Mission Board of the Southern Baptist Convention			
Yangchow Hospital. Maintenance (CM 2765).....	215.00	825.00	.....
London Missionary Society			
Siaochang. Support of additional staff (CM 2167, 2725).....	1,305.68	.....	1,212.51
Methodist Women's Hospital in Peking, Nurses Training School			
Support of additional staff (CM 2678, 2786).....	308.15	533.34	217.82
Nanking Union Hospital. Maintenance (CM 2575, 2763).....	9,250.00	8,250.00	12,679.36
United Christian Missionary Society			
Luchowfu. Maintenance (CM 2637, 2785).....	8,000.00	5,500.00	.....
Nantungchow. Maintenance (CM 2218).....	8,400.00	.....	.....
United Free Church of Scotland			
Mukden. Support of additional staff (CM 2714).....	67.50	.....	.....
Loss in Exchange			
To cover loss in exchange on payments to missionary societies for their hospitals (CM 2503).....	25,005.49	.....	.....

EXHIBIT D—*Continued*GENERAL BUDGET—*Continued*

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
Hospital and Dispensary Development			
Committee on Dispensary Development			
Toward expenses of committee (CM 2996)	\$19,639.56 \$.		\$7,593.32
United Hospital Fund			
For transferring to permanent agencies activities of the Committee on Dispensary Development (ME 21161)		38,750.00	38,750.00
American Conference on Hospital Service. Maintenance (ME 21039, 21178)	7,000.00	6,000.00	10,000.00
Research and teaching in hospitals and clinic service			
Maintenance (ME 21201)		12,500.00	9,921.99
Study of maternity care in England (ME 21033)	358.74		
Human Biology			
Mental hygiene			
National Committee for Mental Hygiene			
General expenses (ME 21106)		7,500.00	7,500.00
Surveys in the care and treatment of mental diseases (ME 2998, 21105)	7,045.44	15,000.00	14,001.45
Canadian National Committee for Mental Hygiene			
Studies in the application of mental hygiene to school children (ME 21108)		15,000.00	15,000.00
National Research Council			
<i>Biological Abstracts</i> . Support of editorial service (ME 21031, 21110)	6,479.17	50,000.00	48,071.06
Australian National Research Council			
Anthropological studies in Australian universities (ME 21111, 21147) .	1,131.92	20,000.00	12,029.01
Salary and travel of visiting professors or special investigators on anthropological problems (ME 21203)		10,000.00	

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The Johns Hopkins University. Biological research (ME 21112) \$	\$47,000.00	\$47,000.00	
Yale University. Promotion of anthropoid research (ME 21114)	10,000.00	10,000.00	
University of Hawaii			
Support of departments for study of biological, mental, and social conditions of people of Hawaii (ME 21115)	20,000.00	20,000.00	
Bishop Museum, Honolulu			
Research in Polynesian anthropology (ME 21116)	10,000.00	8,700.00	
State University of Iowa			
Research in physiology of the brain (ME 2953)	15,000.00		15,000.00
Tohoku Imperial University, Sendai, Japan			
Salary and expenses of visiting professors (ME 21167)		6,250.00	
Keiogijuku University, Tokyo, Japan			
Salary and expenses of visiting professors (ME 21168)		6,250.00	
Equipment and supplies for projects in human biology (ME 21081)	955.98		
Travel of visiting scientists (ME 2954, 21064, 21072)	9,527.79		4,159.48
Surveys (ME 21007, 21133)	11,749.71	20,000.00	6,825.93
Fellowships			
Medical education			
Foreign, exclusive of China (ME 2979, 21097)	25,424.41	200,000.00	133,998.10
Foreign, China (CM 2735, 2767)	6,868.85	68,450.00	43,888.50
For study at the Peking Union Medical College			
Chinese students (CM 2737, 2769)	4,182.62	8,250.00	4,441.37
Foreign students (CM 2736, ME 21177)	3,791.00	8,300.00	3,067.58
National Research Council			
Research fellowships in medicine supported jointly by the Foundation and General Education Board (ME 2980, 21098)	9,351.77	50,000.00	34,842.59
Medical Research Council of Great Britain			
Fellowships in medicine in the United States (ME 21046)	44,210.82		22,882.93
Resident fellowships in Europe (ME 2976)	18,160.08		678.26
Lingnan University			
Students from the Lingnan University for study in the medical department of the University of Hongkong (CM 2554 to 2558)	3,600.00		

EXHIBIT D—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Fellowships—Continued			
Medical education—Continued			
Germany, Emergency Committee of German Science. Administra- tion of traveling fellowships (ME 21181).....	\$.....	\$7,500.00	\$.....
Nursing education (ME 21057, 21192).....	27,297.66	70,000.00	39,483.72
Human biology			
Administered by the Foundation (ME 21005, 21185).....	20.99	45,000.00	28,160.62
National Research Council			
Support of fellowships in biology (ME 21002, 21109).....	16,332.17	75,000.00	79,410.85
National Committee for Mental Hygiene			
Fellowships in mental hygiene (ME 21000, 21107).....	4,640.66	15,000.00	13,083.89
Australian National Research Council			
Fellowships in anthropology and related subjects in Australia and New Zealand (ME 21184).....	.....	15,000.00	.....
Physics, chemistry, and mathematics			
National Research Council (ME 2997, 21118).....	17,559.22	125,000.00	128,817.44
Field Service			
Salaries and expenses of divisional staff (ME 2899, 21019, 21144, 21145, 21171).....	19,737.25	77,500.00	71,419.19
Surveys by others than officers (ME 21096).....	.....	5,000.00	.....
	\$1,089,615.62	\$2,689,624.34	
Unexpended balances of appropriations allowed to lapse.....	173,671.76	12,861.07	
TOTALS: GENERAL BUDGET.....	\$915,943.86	\$2,676,763.27	\$2,188,298.14

CAPITAL REQUIREMENTS

Medical Education

Belgium

Free University of Brussels

Toward building and equipment of the new University institutes
(ME 21076, 21159)

\$72,685.94

\$923,000.00

\$849,266.92

Brazil

Faculty of Medicine, São Paulo

Toward buildings for laboratories of anatomy, physiology, chemistry, and pathology (DME 21065, 21239)

50,000.00

300,000.00

.....

Canada

University of Montreal, Faculty of Medicine

Development of laboratories (ME 21070, 21182)

25,000.00

25,000.00

25,000.00

England

University of Cambridge

Toward endowment of School of Pathology (ME 21103)

.....

25,000.00

22,368.94

University College, London

Toward endowment of departments of physiology, pharmacology, and anatomy (ME 21179)

.....

575,000.00

573,978.27

London Hospital Medical College

Aid for unification of pathological laboratories (ME 21152)

.....

24,300.00

24,265.63

France

University of Lyon

Interest on endowment (ME 21252)

.....

635.00

.....

University of Strasbourg

Toward development of medical school (ME 2955, 21165)

18,330.00

12,000.00

17,252.30

Germany

Institute of Psychiatry, Munich

Toward erection of building (ME 21158)

.....

250,000.00

250,000.00

Haiti

National School of Medicine and Pharmacy, Port au Prince

For teaching equipment (ME 21164)

.....

30,000.00

.....

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EXHIBIT D—Continued

CAPITAL REQUIREMENTS—Continued
Medical Education—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
Siam			
Chulalongkorn University			
Medical school buildings (ME 2819, 21149)	\$21,265.18 \$		\$14,928.43
United States			
New York Academy of Medicine			
Interest on endowment (ME 2985, 21104)	10,708.54	62,500.00	73,208.54
State University of Iowa			
Toward development of its medical school (ME 21191)		225,000.00	225,000.00
China			
Peking Union Medical College			
Original construction program			
Purchase of land (CM 2381)	799.60		
Building and fixed equipment (CM 2646)	21,480.10		6,078.83
Library (CM 2624)	753.79		336.56
Movable equipment (CM 2614)	4,536.28		3,365.94
Accessories (CM 2529)	10,328.84		
Second construction program			
Buildings and fixed equipment (CM 2745, 2782)	285,536.26	195,000.00	210,474.72
Movable equipment (CM 2746)	9,624.38		3,275.05
Accessories (CM 2783)		5,000.00	1,605.01
Isolation Hospital. Building and equipment (ME 21199)		35,000.00	2,299.96
Fundamental repairs, alterations, additions, and improvements to the buildings and equipment (ME 21172)		10,000.00	5,015.91
Peking stock (CM 2648, 2712)	300,000.00		300,000.00

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Shanghai Medical College. Purchase of land (CM 2269)	\$2,031.65	\$	\$
Shantung Christian University			
Loss in exchange on remittances for capital expenditure (CM 2693) ..	30,000.00	.....	.....
Schools of Hygiene and Public Health			
Harvard University School of Public Health			
Reconstruction of library (ME 21189)		100,000.00	100,000.00
Interest on endowment (ME 21190)		24,750.00	24,750.00
Premedical Schools			
Lingnan University (Canton Christian College)			
Construction and equipment of science building (CM 2631)	13,000.00	.....	8,929.25
Equipment (CM 2443)	10,000.00	.....	10,000.00
Nanking University. Equipment of science departments (CM 2681) ..	5,000.00	.....	.....
National Southeastern University			
Toward construction and equipment of science building (CM 2587) ..	27,209.94	.....	5,633.94
Scientific equipment Mex. 25,000 (CM 2588)	15,000.00	.....	.....
Peking (Yenching) University			
Construction and equipment of science building (CM 2602)	18,105.95	.....	5,824.95
Shantung Christian University			
Additional equipment and alteration for science buildings (CM 2727) ..	4,777.38	.....	.....
Tsing Hua College. Equipment Mex. 5,000 (CM 2750)	2,900.00	.....	1,131.42
Nursing Education			
England			
St. Thomas's Hospital, London, School of Nursing			
Erection and equipment of diet kitchen (ME 21154)	10,000.00	.....	.....
Hungary			
Budapest School of Nursing			
Alterations and equipment (ME 21008)	10,000.00	.....	.....
School of Nursing, University of Debreczen			
Building, equipment, and furnishings (ME 21009, 21195-96)	25,000.00	9,400.00	24,956.59
Poland			
University of Cracow, School of Public Health and Bedside Nursing			
Buildings and equipment (ME 2833)	41,577.08	.....	1,148.49

EXHIBIT D—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
CAPITAL REQUIREMENTS—Continued			
Nursing Education—Continued			
Poland—Continued			
Warsaw State School of Nursing			
Buildings and equipment (ME 21166)	\$.....	\$100,000.00	\$.....
Yugoslavia			
School of Public Health and Bedside Nursing, Zagreb			
Building and equipment (ME 2832)	42.96	.....	.....
Hospitals in China			
Board of Foreign Missions of the Methodist Episcopal Church			
Peking. Equipment for dental department (CM 2540)	9,500.00	.....	Cr. 500.00
Wuhu. Building and equipment (CM 2499)	4,726.61	.....	.....
Board of Foreign Missions of the Reformed Church in America			
Amoy. Equipment (CM 2282)	2,025.00	.....	2,025.00
London Missionary Society			
Tsangchow. Laboratory equipment (CM 2766)	2,000.00	.....	2,000.00
Human Biology			
The Johns Hopkins University. Alterations of buildings and equip- ment for biological research (ME 21113)	.....	11,000.00	11,000.00
Miscellaneous: Land and building for Peking office (CM 2671)	7,190.75	.....	.....
	\$1,071,136.23	\$2,942,585.00	
Unexpended balances of appropriations allowed to lapse	26,351.75	3,687.16	
TOTALS: CAPITAL REQUIREMENTS	\$1,044,784.48	\$2,938,897.84	\$2,804,620.65
TOTALS: DIVISION OF MEDICAL EDUCATION	\$1,960,728.34	\$5,615,661.11	\$4,992,918.79

1927 FOUNDATION APPROPRIATIONS
UNPAID BALANCES OF APPROPRIATIONS MADE IN PRIOR YEARS
AND PAYMENTS THEREON MADE IN 1927

EXHIBIT E

INTERNATIONAL HEALTH DIVISION

TREASURER'S REPORT				323
	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS	
GENERAL BUDGET				
Hookworm Work				
United States				
Alabama				
1925 (IH 22544)	\$25.00	\$	\$25.00	
Mexico				
1926 (IH 22775-78)			2,430.76	
1927 (IH 23171-74, 23424)	6,814.76	12,710.00	6,259.37	
Central America				
Costa Rica				
1926 (IH 23066)	750.00		750.00	
Guatemala				
1926 (IH 22779)	2,716.18		406.84	
1927 (IH 23175)		4,515.00	2,921.88	
Honduras				
1927 (IH 23379)		2,552.32		
Panama				
1926 (IH 22780)			1,360.07	
1927 (IH 23176, 23505)	6,158.08	11,058.00	5,811.13	
South America				
Colombia				
1926 (IH 22786-88)	8,158.56		5,578.67	
1927 (IH 23181-83)		30,000.00	21,721.96	

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Hookworm Work—Continued			
South America—Continued			
Paraguay			
1926 (IH 22789)	\$4,443.22	\$.....	\$4,389.86
1927 (IH 23184)	.....	18,000.00	9,796.79
Venezuela			
1927 (IH 23387)	.....	8,000.00	4,477.36
West Indies			
Jamaica			
1926 (IH 22781-84)	2,939.35	.....	841.76
1927 (IH 23177-79)	.....	10,175.00	8,091.75
Porto Rico			
1926 (IH 22785)	6,028.82	.....	854.37
1927 (IH 23180)	.....	4,720.00	2,158.14
The East			
Australia			
1924 (IH 22070)	2,252.94	.....	183.20
Ceylon			
1926 (IH 23026)	355.63	.....	125.34
Fiji			
1925 (IH 22335, 22377)	214.32	.....	13.44
India			
1924 (IH 22501)	1,500.00	.....	1,500.00
1925 (IH 22071-72)	4,148.01	.....	7,426.75
1926 (IH 22899-900)	12,913.74	.....	1,219.20
1927 (IH 23185-86)	.....	7,670.00	2,712.61

Java					
1926 (IH 22901, 23062)	.....	8,081.00	\$.....	14,500.00	\$3,991.92
1927 (IH 23187)	.....	.....	.....	.....	5,950.96
Sarawak					
1927 (IH 23566)	.....	.....	.....	1,000.00	442.99
Seychelles. Survey					
1926 (IH 23106)	.....	87.22	.....	.....	16.60
Siam					
1926 (IH 22902, 23046, 23067-68)	.....	3,962.27	.....	.....	2,993.24
1927 (IH 23188-89, 23504)	.....	.....	.....	12,910.00	10,403.37
South Sea Islands					
1927 (IH 23447)	.....	.....	.....	800.00	671.51
Straits Settlements					
1926 (IH 22790)	.....	2,868.15	.....	.....	2,243.79
1927 (IH 23190)	.....	.....	.....	12,800.00	10,649.31
Europe					
Spain					
1926 (IH 23024, 23081)	.....	1,564.76	.....	.....	398.76
1927 (IH 23191)	.....	.....	.....	1,850.00	1,099.81
Field Studies					
Alabama					
1926 (IH 22947)	.....	3,990.38	.....	.....	1,620.72
1927 (IH 23402)	.....	.....	.....	6,000.00	1,607.94
Studies by Dr. W. W. Cort					
1926 (IH 22898)	.....	3,642.32	.....	.....	3,613.51
1927 (IH 23191)	.....	.....	.....	7,950.16	5,540.01
Vanderbilt University					
Research in carbon tetrachloride					
1926 (IH 23025)	.....	6,200.43	.....	.....	2,209.00
1927 (IH 23448)	.....	.....	.....	20,000.00	14,196.99

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Hookworm Work—Continued			
Field Studies—Continued			
Egypt			
1927 (IH 23490).....\$.....		\$6,000.00	\$4,953.52
Miscellaneous			
Motion picture film on hookworm disease			
(IH 22493, 23193).....	856.85	1,000.00	31.41
County Health Work			
United States			
Alabama			
1926 (IH 22969).....	3,188.91	.....	2,415.75
1927 (IH 23388).....	.....	6,787.50	4,000.43
Arkansas			
1925-26 (IH 23806-07, 23028, 23111-12).....	3,550.00	.....	1,200.00
1927 (IH 23227-29, 23598).....	.....	2,100.00	600.00
California			
1926 (IH 22970-71, 23092-93, 23150).....	2,749.98	.....	2,749.98
1927 (IH 23230-32, 23452, 23548-49, 23596-97).....	.....	7,666.66	4,916.67
Colorado			
1926 (IH 22808).....	625.00	.....	625.00
1927 (IH 23233).....	.....	2,000.00	1,500.00
Georgia			
1926 (IH 22879).....	2,383.63	.....	1,831.20
1927 (IH 23234).....	4,000.00	1,930.28
Iowa			
1926 (IH 22972).....	945.49	745.49
1927 (IH 23235, 23524).....	3,100.00	2,275.00

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EXHIBIT E—Continued

		PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued				
County Health Work—Continued				
United States—Continued				
South Dakota				
1926 (IH 22585-86, 22820, 22986)		\$2,000.02	\$.....	\$500.00
1927 (IH 23287, 23454)			4,250.00	437.49
Tennessee				
1926 (IH 22922-31, 23038, 23129, 23156)		4,240.34		2,865.97
1927 (IH 23430-41, 23530-31)			13,630.00	9,329.80
Texas				
1926 (IH 22832, 22987-89, 23157-60, 23130-31, 23175, 23181)		2,330.93		1,699.14
1927 (IH 23288-90, 23584-85)			4,733.28	2,445.23
Utah				
1925-26 (IH 22441-42, 22990-92, 23136, 23161, 23169, 22441-42)		4,937.50		
1927 (IH 23291-95, 23534)			6,312.50	
Virginia				
1926 (IH 22993-96)		2,316.46		1,759.89
1927 (IH 23296-300, 23455, 23480, 23500)			15,170.83	10,641.81
West Virginia				
1926 (IH 22997, 23002, 23132, 23162, 23383-84)		7,516.45		3,356.64
1927 (IH 23301-09, 23535-38, 23592-94)			20,350.00	10,526.11
Wyoming				
1926 (IH 23022)		301.02		223.56
1927 (IH 23310)			1,000.00	642.25
Mississippi Flood Area				
Balance of \$500,000 appropriated for county health work in Mis- sissippi flood area (IH 23521)			302,995.83	

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Mississippi Flood Area. Funds allotted under IH 23521

Arkansas.....	\$.....	\$43,655.50	\$1,578.22
Kentucky.....	.....	21,616.67	2,644.66
Louisiana.....	.....	51,140.00	.....
Mississippi.....	.....	21,200.00	1,659.48
Missouri.....	.....	5,480.00	289.98
Tennessee.....	.....	2,912.00	798.48
Training Station.....	.....	51,000.00	35,611.50

Foreign

Austria			
1926 (IH 23049).....	1,451.11	.....	1,429.42
1927 (IH 23410).....	.....	4,180.00	.....
Brazil			
1926 (IH 22829-43, 23050-60, 23073, 23075, 23148).....	27,160.26	.....	13,850.90
1927 (IH 23311-27, 23467, 23501, 23506-08, 23559-61).....	.....	43,899.00	19,710.74
Bulgaria			
1927 (IH 23517).....	.....	3,300.00	.....
Canada			
1926 (IH 23027, 23076, 23149).....	3,547.49	.....	1,063.47
1927 (IH 23328-29, 23465, 23498, 23519, 23586-88, 23600-602).....	.....	17,478.55	.....
Ceylon			
1927 (IH 23330).....	.....	3,300.00	107.89
Czechoslovakia			
1926 (IH 23138).....	1,000.00	.....	297.62
1927 (IH 23487, 23556).....	.....	8,000.00	.....
France			
1926 (IH 22966, 23061, 23080, 23086).....	36,000.00	.....	2,191.77
1927 (IH 23382, 23411-13, 23469).....	.....	32,700.00	.....
Hungary			
1926 (IH 23065).....	500.00	.....	498.52
1927 (IH 23461, 23558).....	.....	5,300.00	.....

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
County Health Work—Continued			
Foreign—Continued			
Philippine Islands			
1927 (IH 23509)	\$	\$500.00	\$
Poland			
1926 (IH 22967-68, 23147)	11,346.63	27,550.00	5,773.69
1927 (IH 23414-16, 23470-71)			4,219.59
Porto Rico			
1926 (IH 23134)	470.74		460.55
1927 (IH 23331, 23417, 23485, 23487, 23520)		5,555.00	3,623.58
Yugoslavia			
1927 (IH 23378)		14,000.00	14,000.00
Malaria Work			
Surveys and demonstrations			
United States			
Alabama			
1926 (IH 23047, 23135)	6,043.24		4,853.79
1927 (IH 23389-92, 23478, 23491)		8,424.99	3,903.38
Georgia			
1926 (IH 22878)	1,955.36		1,296.88
1927 (IH 23194)		3,200.00	1,334.03
Louisiana			
1926 (IH 22909-10, 22952)	1,176.11		909.23
1927 (IH 23195-97, 23403)		4,150.00	2,748.11
Mississippi			
1926 (IH 22953-59)	5,011.59		3,844.72
1927 (IH 23198-204, 23492)		14,075.00	9,453.58

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Malaria Work—Continued			
Surveys and Demonstrations—Continued			
Foreign Countries—Continued			
Porto Rico			
1926 (IH 22798)	\$281.51 \$	500.00	\$258.15
1927 (IH 23211) . . . . .	.....		252.58
Spain			
1926 (IH 23087)	2,750.64	.....	1,701.66
1927 (IH 23217) . . . . .	.....	6,650.00	1,774.72
Venezuela			
Malaria and hookworm work listed under Hookworm			
Field studies and experiments			
Alabama			
1926 (IH 23070)	850.00	.....	.....
1927 (IH 23513) . . . . .	.....	503.33	.....
The Johns Hopkins School of Hygiene and Public Health			
1926 (IH 22903, 23069)	422.36	.....	372.58
1927 (IH 23381, 23514) . . . . .	.....	4,075.00	3,660.46
Miscellaneous			
(IH 22948, 23320, 23486)	1,731.90	8,500.00	4,285.95
Training of malaria personnel			
North Carolina, Edenton			
1926 (IH 23048)	8,599.90	Cr. 4.77
1927 (IH 23221)	15,280.00	1,630.64
Georgia			
1925 (IH 22555)	24.49	24.49

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France				
1926 (IH 22677)	\$13,779.91	\$.	7,800.00	\$5,160.29
1927 (IH 23219)				54.07
Miscellaneous. Motion picture on malaria (IH 23477)			500.00	
Yellow Fever Work				
Brazil				
1926 (IH 22800, 23079, 23144, 23170A)	110,116.62			94,302.17
1927 (IH 23222, 23475, 23522)			275,000.00	136,992.84
Mexico and Central America				
1923 (IH 21846)	125.00			125.00
1925 (IH 22485, 22498)	6,144.28			328.70
1926 (IH 22801)	4,849.97			
West Africa				
1926 (IH 22802)	46,800.60			36,011.64
1927 (IH 23223, 23899, 23604)			120,000.00	87,208.16
Training of personnel				
1926 (IH 22803)				719.26
1927 (IH 23224)	6,571.33		10,000.00	3,691.33
Vaccine and serum				
1926 (IH 22804)				1,075.18
1927 (IH 23225)	2,207.24		7,000.00	4,008.01
History of yellow fever				
1926 (IH 22805, 23023)	5,750.00			
1927 (IH 23226)			3,500.00	2,393.00
State Health Services				
Epidemiology				
United States				
Alabama				
1926 (IH 23012)	2,917.74			2,315.09
1927 (IH 23394)			4,500.00	1,197.84

EXHIBIT E—Continued

		PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued				
State Health Services—Continued				
Epidemiology—Continued				
United States—Continued				
Kansas				
1926 (IH 22848)	.....	\$885.37	\$.....	\$92.09
1927 (IH 23340)	.....	.....	600.00	228.96
Kentucky				
1926 (IH 23163)	.....	625.00	.....	.....
1927 (IH 23341, 23575)	.....	.....	2,791.67	.....
Louisiana				
1926 (IH 23163)	.....	1,912.50	.....	.....
1927 (IH 23342, 23466)	.....	.....	2,700.00	.....
Mississippi				
1926 (IH 23013)	.....	2,359.65	.....	803.73
1927 (IH 23343)	.....	.....	3,375.00	2,516.25
Missouri				
1927 (IH 23344)	.....	.....	3,300.00	.....
Montana				
1927 (IH 23525)	.....	.....	1,825.00	.....
Rhode Island				
1926 (IH 22847)	.....	580.87	.....	434.66
1927 (IH 23458)	.....	.....	900.00	788.69
South Carolina				
1926 (IH 23164)	193.75	193.75
1927 (IH 23345, 23523)	775.00	581.25

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South Dakota					
1926 (IH 23041)	\$1,375.00	\$.	\$1,142.32
1927 (IH 23346, 23528)			2,750.00	505.47
Tennessee					
1926 (IH 22849)	.....	844.35			645.40
1927 (IH 23445, 23573)	.....			2,575.00	1,890.73
Utah					
1925-26 (IH 22466, 22667, 23014)	.....	3,982.35			.....
1927 (IH 23347, 23533)	.....			3,000.00	.....
Virginia					
1926 (IH 23015)	.....	540.00			.....
Conference of Epidemiologists (IH 23489)	.....			4,000.00	1,340.49
Foreign					
Denmark					
1926 (IH 23077)	.....	2,000.00			.....
1927 (IH 23348, 23457)	.....			2,160.00	532.30
Spain					
1927 (IH 23462)	.....			5,760.00	.....
Sanitary Engineering					
United States					
Alabama					
1926 (IH 23010)	.....	901.25			789.10
1927 (IH 23395)	.....			1,432.50	456.01
Idaho					
1926 (IH 22934)	.....	21.33			.....
1927 (IH 23352, 23527)	.....			1,600.00	1,565.83
Iowa					
1926 (IH 23421)	.....	58.33			58.33
1927 (IH 23422)	.....			349.98	174.99

EXHIBIT E—Continued

		PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued				
State Health Services—Continued				
Sanitary engineering—Continued				
United States—Continued				
Maine				
1926 (IH 22852)		\$350.00		\$350.00
1927 (IH 23353)			350.00	350.00
Maryland				
1927 (IH 23385)			2,200.00	
Oregon				
1926 (IH 23011, 23101)		1,032.04		446.34
1927 (IH 23354)			900.00	733.10
Tennessee				
1926 (IH 23165)		571.67		375.18
1927 (IH 23443)			1,143.33	1,143.33
Vital statistics				
United States				
Alabama				
1926 (IH 23016, 23078)		670.00		217.50
1927 (IH 23396)			1,012.50	232.50
Arkansas				
1926 (IH 23017)		1,350.00		
1927 (IH 23349)			750.00	
Iowa				
1926 (IH 23018)		537.50		537.50
1927 (IH 23340, 23495)			1,500.00	1,500.00
Mississippi				
1926 (IH 23063)		167.62		
1927 (IH 23459)			2,250.00	1,406.48

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Montana				
1926 (IH 23019)	\$625.00	\$625.00	\$625.00	\$625.00
1927 (IH 23351)	1,250.00	1,250.00	1,250.00	1,250.00
Oklahoma				
1926 (IH 23102)	393.30	393.30	393.30	393.30
1927 (IH 23603)	500.00	500.00	500.00	500.00
South Carolina				
1927 (IH 23900)	290.00	290.00	290.00	290.00
Tennessee				
1926 (IH 22850)	375.00	375.00	375.00	375.00
1927 (IH 23444, 23481)	2,250.00	2,250.00	2,250.00	2,250.00
Texas				
1926 (IH 22851)	1,200.00	1,200.00	1,200.00	1,200.00
1927 (IH 23861)	287.50	287.50	287.50	287.50
Foreign				
Colombia				
1927 (IH 23563)	880.00	880.00	880.00	880.00
Bulgaria				
1927 (IH 23557)	1,235.00	1,235.00	1,235.00	1,235.00
Denmark				
1926 (IH 23039)	1,620.00	1,620.00	1,620.00	1,620.00
1927 (IH 23456)	1,581.19	1,581.19	1,581.19	1,581.19
Public health laboratory service				
United States				
Alabama				
1926 (IH 23004)	3,614.00	3,614.00	3,614.00	3,614.00
1927 (IH 23393)	3,387.05	3,387.05	3,387.05	3,387.05
Arkansas				
1925 (IH 22455)	262.92	262.92	262.92	262.92
Maine				
1926 (IH 22844)	650.00	650.00	650.00	650.00
1927 (IH 23332)	780.00	780.00	780.00	780.00

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
State Health Services—Continued			
Public health laboratory service—Continued			
United States—Continued			
Missouri			
1926 (IH 23005, 23133)	\$2,700.00	\$	\$2,049.17
1927 (IH 23333, 23571) . . . . .	.....	3,600.00	1,800.00
Oregon			
1926 (IH 23094)	750.00	.....	340.98
South Carolina			
1926 (IH 23006)	300.00	.....	300.00
Tennessee			
1926 (IH 23007)	320.62	.....	258.75
1927 (IH 23442, 23529) . . . . .	.....	1,000.00	741.25
Texas			
1926 (IH 22933, 23166)	339.85	.....	129.65
1927 (IH 23334, 23570) . . . . .	.....	3,000.00	2,867.03
Utah			
1926 (IH 23008)	3,900.00	.....	2,868.92
1927 (IH 23335, 23532) . . . . .	.....	3,750.00	.....
Foreign			
Costa Rica			
1926 (IH 23003)	1,844.40	.....	1,324.10
1927 (IH 23483) . . . . .	.....	200.00	175.00
Colombia			
1926 (IH 23084)	4,166.66	.....	410.50
1927 (IH 23338) . . . . .	.....	5,000.00	4,079.00

Guatemala				
1926 (IH 22845).....	\$2,230.59	\$.....	\$196.25	
1927 (IH 23336).....		3,350.00	1,143.29	
Nicaragua				
1926 (IH 22846, 23085).....	1,046.07	.....	762.00	
1927 (IH 23337).....		5,000.00	3,672.61	
Public health nursing				
Brazil				
1926 (IH 22860).....	15,815.02	.....	5,325.31	
1927 (IH 23359).....		23,000.00	14,218.37	
France				
Central Bureau of Nurses				
1925 (IH 22675).....	3,900.00	.....	1,038.09	
1926 (IH 22861).....	10,500.00	.....	.....
1927 (IH 23482).....		4,375.00	.....
General				
Iowa. Division of communicable diseases and child hygiene work				
(IH 23526).....		800.00	400.00	
Illinois. Division of public health education				
(IH 23591).....		400.00	.....
Jamaica. School hygiene unit				
(IH 23034).....	169.23	612.50	504.22	
Bureaus of Study and Reform of Public Health Activities				
For study of public health problems				
Czechoslovakia				
1926 (IH 22853).....	1,720.00	.....	1,720.00	
1927 (IH 23356, 23569).....		8,020.00	6,520.00	
France				
National Office of Social Hygiene of the Ministry of Labor				
1926 (IH 23033).....	21,000.00	.....	.....
1927 (IH 23474).....		15,000.00	.....

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Bureaus of Study and Reform of Public Health Activities—Continued			
For Study of Public Health Problems			
Hungary			
1926 (IH 22854)	\$1,233.06	\$.....	\$1,233.06
1927 (IH 23357)	.....	5,000.00	3,788.32
Poland			
1926 (IH 22855)	5,923.76	.....	3,233.42
1927 (IH 23358)	.....	10,000.00	2,009.13
League of Nations			
Toward maintenance of an international interchange of public health personnel			
1925 (IH 22472)	10,878.02	.....	Cr. 5,346.73
1926 (IH 22856)	75,000.00	.....	73,484.58
1927 (IH 23362)	.....	50,000.00	.....
Toward development of an epidemiological intelligence service			
1925 (IH 22471)	307.30	.....	.....
1926 (IH 22857)	32,840.00	.....	32,582.83
1927 (IH 23359)	.....	32,840.00	31.63
Epidemiological Intelligence Bureau in the Far East			
1925 (IH 22496)	13,197.73	.....	.....
1926 (IH 22859)	25,000.00	.....	25,000.00
1927 (IH 23361)	.....	25,000.00	15.00
Toward cost of training health officers in vital and public health statistics			
1926 (IH 22858)	21,000.00	20,580.47
1927 (IH 23360)	21,000.00

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Toward establishment of Center for Public Health Documentation 1927 (IH 23516)	\$.....	\$6,937.50	\$.....	
Public Health Education				
Schools of hygiene and public health				
Brazil				
Institute of Hygiene, São Paulo. Equipment and supplies (IH 22672)	198.87		52.34	
England				
London School of Hygiene and Tropical Medicine Operation (IH 22862, 23363)	25,000.00	25,000.00	30,580.38	
Hungary				
State Hygienic Institute, Budapest. Operation (IH 22640)	3,680.00			
Poland				
School of Hygiene, Warsaw. Support of biochemist (IH) 23364)		4,320.00	3,120.00	
Study and training courses for health officers				
Health officers' institutes				
Arkansas (IH 23856)		75.00	75.00	
California (IH 23100)	74.54			
Kansas (IH 23473)		200.00	152.77	
Missouri (IH 23515)		100.00	56.27	
Ohio (IH 23168)	250.00		128.10	
Field training for candidates and new appointees for state health work (IH 22767, 23099, 23446)	12,868.56	10,000.00	10,621.32	
Training of government health officials				
Travel of state health officials in United States and Canada (IH 22766, 23140, 23370, 23572)	5,999.01	17,000.00	8,563.70	
Travel of European health officials in Europe (IH 23139, 23371)	3,448.82	5,000.00	6,416.02	
Travel of visiting health officials (IH 22281, 22654, 22765, 22870, 23372)	10,018.67	25,000.00	19,239.80	

EXHIBIT E—Continued

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
GENERAL BUDGET—Continued			
Public Health Education—Continued			
Teaching of hygiene in medical schools			
Harvard Medical School			
Preparation of syllabus (IH 23098, 23373)	\$4,500.00	\$8,500.00	\$4,500.00
School for Sanitary Inspectors, Jamaica			
Training course (IH 23562)		442.50	409.33
Training stations			
United States			
Alabama			
1926 (IH 22897, 22943-46)	4,551.96		4,370.20
1927 (IH 23397-98, 23401, 23502)		6,187.50	4,157.24
Ohio			
1927 (IH 23463, 23565)		7,458.32	4,735.37
Summer courses for medical students. (IH 23032)	1,507.68		79.00
Fellowships			
Grants to doctors for study of public health			
Foreign and United States			
(IH 23423, 23088, 23365, 23605, 23095, 23595)	27,810.35	275,500.00	227,845.67
Resident			
China (IH 23503)		1,000.00	
Italy (IH 22866, 23468)	517.09	5,000.00	4,749.92
Hungary (IH 22865, 23367)	2,153.75	5,000.00	6,021.71
Poland (IH 22867, 23368)	5,000.00	5,000.00	5,061.41
Yugoslavia (IH 22868, 23369)	2,927.04	7,500.00	7,173.85

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Miscellaneous				
Field research in respiratory diseases (IH 23589).....	\$.....		\$2,750.00	\$1,035.25
Field equipment and supplies (IH 22872, 23374).....		208.06	13,500.00	11,338.18
Pamphlets and charts (IH 22872, 23374).....		287.97	5,000.00	1,374.06
Express, freight, and exchange (IH 22872, 23374).....		6,418.32	2,000.00	1,445.08
Hookworm and malaria films donated or lent (IH 22872, 23374).....		900.88	1,000.00	429.90
Public health literature (IH 22871).....		669.41	.....	528.60
Field Service				
Salaries and expenses of staff				
Salaries (IH 22872, 23374).....		11,824.90	452,500.00	410,122.89
Traveling expenses (IH 22872, 23374).....		26,623.86	160,000.00	164,893.83
Commutation (IH 22872, 23374).....		23,499.03	60,000.00	44,934.90
Medical examinations (IH 22872, 23374).....		990.40	1,500.00	743.00
Drugs for conserving health (IH 22872, 23374).....		485.55	500.00	40.93
Bonding (IH 22872, 23374).....		2,617.37	6,000.00	3,541.03
Automobiles (IH 22872, 23374).....		620.41	3,000.00	1,761.10
Insurance and retirement allowances (IH 22872, 23374).....		25,831.60	45,000.00	40,199.08
Rio de Janeiro office. Administration (IH 22875, 23376).....		9,086.46	21,470.00	17,645.10
		\$1,062,775.45	\$3,166,828.50	
Unexpended balances of appropriations allowed to lapse.....		305,701.71	8,599.82	
TOTALS: GENERAL BUDGET.....		\$757,073.74	\$3,158,228.68	\$2,267,321.68

EXHIBIT E—*Continued*

	PRIOR APPROPRIA- TIONS	1927 APPROPRIA- TIONS	1927 PAYMENTS
CAPITAL REQUIREMENTS			
Schools of Hygiene and Public Health			
Brazil			
Institute of Hygiene, São Paulo Building and equipment (IH 23141, 23380)	\$53,100.00	\$125,000.00	\$23,987.00
Canada			
School of Hygiene, University of Toronto Interest on endowment (IH 23378)		12,500.00	12,500.00
Czechoslovakia			
State Institute of Public Health, Prague Buildings and equipment (IH 21680, 22174, 22497)	438,440.67		95,054.50
England			
London School of Hygiene and Tropical Medicine Land, building, equipment (IH 22938, 23379)	371.67	970,000.00	969,783.48
Hungary			
State Hygienic Institute, Budapest Building and equipment (IH 22639, 23472)	65,000.00	45,000.00	60,297.54
Norway			
State Institute of Hygiene, Oslo Building and equipment (IH 22876)	100,950.00		100,626.54
Trinidad			
Imperial College of Tropical Agriculture, St. Augustine Toward maintenance of chair of sanitation and tropical hygiene (IH 23142, 23382)	15.00	5,000.00	4,872.00

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United States				
School of Public Health, Harvard University				
Toward endowment (RF 21013).....	\$12,500.00	\$.....		\$12,500.00
Yugoslavia				
School of Public Health, Zagreb				
Building and equipment				
(IH 23097, 23381).....	1,737.50	10,000.00		9,891.00
Schools of Nursing				
Brazil, Rio de Janeiro (IH 23042, 23143).....	99,826.96	.....		99,334.48
School for Native Medical Assistants,				
Suva, Fiji				
Toward enlargement of buildings				
(IH 23518).....	.....	10,000.00		4,800.00
Unexpended balances of appropriations allowed to lapse.....	\$771,941.80	\$1,177,500.00		
	2,447.63			
TOTALS: CAPITAL REQUIREMENTS.....	\$769,494.17	\$1,177,500.00		\$1,393,646.54
TOTALS: INTERNATIONAL HEALTH DIVISION.....	\$1,526,567.91	\$4,335,728.68		\$3,660,968.22

EXHIBIT F
SUMMARY OF APPROPRIATIONS AND PAYMENTS

	PRIOR AP- PROPRIATIONS (BALANCES)	1927 APPROPRIA- TIONS	1927 PAYMENTS
General Budget			
Central Administration.....	\$103,154.22	\$700,184.00	\$626,231.78
International Health Division.....	757,073.74	3,158,228.68	2,267,321.68
Division of Medical Education.....	915,943.86	2,676,763.27	2,188,298.14
TOTALS: GENERAL BUDGET.....	<u>\$1,776,171.82</u>	<u>\$6,535,175.95</u>	<u>\$5,081,851.60</u>
Capital Requirements			
Central Administration.....	\$.....	\$1,943,005.00	\$1,943,005.00
International Health Division.....	769,494.17	1,177,500.00	1,393,046.54
Division of Medical Education.....	1,044,784.48	2,938,897.84	2,804,620.65
TOTALS: CAPITAL REQUIREMENTS.....	<u>\$1,814,278.65</u>	<u>\$6,059,402.84</u>	<u>\$6,141,272.19</u>
GRAND TOTALS.....	<u>\$3,590,450.47</u>	<u>\$12,594,578.79</u>	<u>\$11,223,123.79</u>
Prior Appropriations.....		\$3,590,450.47	
1927 Appropriations.....		12,594,578.79	
TOTAL APPROPRIATIONS.....		<u>\$16,185,029.26</u>	
1927 Payments.....		11,223,123.79	
Balance payable on appropriations.....		<u>\$4,961,905.47</u>	

In addition to the foregoing, the Foundation has made pledges and appropriations which become effective in future years, and which will require for payment the following amounts:

Year 1928.....	\$8,798,377.00
Year 1929.....	4,066,378.00
Year 1930.....	2,004,938.00
Year 1931.....	319,217.00
Year 1932.....	208,775.00
Year 1933.....	106,285.00
Year 1934.....	80,958.00
TOTAL.....	\$15,584,928.00

EXHIBIT G
STATEMENT OF PRINCIPAL FUNDS

GENERAL FUND

Balance in General Fund December 31, 1926.....	\$165,281,624.50
Payment of December 31, 1926, of \$10,000 refused and returned by the Executors of Estate of Laura Spelman Rockefeller (see page 300 of this report).....	10,000.00
	<hr/>
	\$165,291,624.50
Less amount transferred to General Income in accordance with a resolution of the members of the Foundation.....	3,000,000.00
	<hr/>
Balance.....	\$162,291,624.50
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This fund is accounted for as follows:	
Securities.....	\$143,105,057.83
Secured demand loans.....	19,186,566.67
	<hr/>
	\$162,291,624.50
	<hr/>

EXHIBIT H

LAND, BUILDINGS, AND EQUIPMENT FUND

	BALANCE DEC. 31, 1926	EXPENDI- TURES 1927	BALANCE DEC. 31, 1927
Home Office:			
Library.....	\$6,436.74	\$1,038.21	\$7,474.95
Equipment.....	41,303.82	3,682.53	44,986.35
Paris Office:			
Part interest in building occupied by Paris office.....		68,000.00	68,000.00
Peking Office			
Land and building.....	10,809.25	.....	10,809.25
Peking Union Medical College:			
Original purchase.....	171,013.29	.....	171,013.29
Additional land.....	206,154.44	.....	206,154.44
New buildings.....	7,045,386.00	218,853.51	7,264,239.51
Alterations, original buildings.....	293,400.00	.....	293,400.00
Alterations, Chinese houses.....	5,129.63	.....	5,129.63
Alterations, new buildings.....	.....	5,015.91	5,015.91
Movable equipment.....	455,567.24	6,640.99	462,208.23
Accessories.....	385,054.86	1,605.01	386,659.87
Supplies.....	20,200.09	.....	20,200.09
Heavy furniture for staff residences.....	4,560.16	.....	4,560.16
Library.....	87,246.21	336.56	87,582.77
Street improvements.....	8,899.72	.....	8,899.72
Shanghai Medical School			
Land.....	298,331.95	.....	298,331.95
TOTALS.....	<u>\$9,039,493.40</u>	<u>\$305,172.72</u>	<u>\$9,344,666.12</u>

EXHIBIT I
SCHEDULE OF SECURITIES IN GENERAL FUND ON DECEMBER 31, 1927
BONDS

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
American Telephone & Telegraph Co.	5	Dec., 1946	\$100,000.00	97.75	\$97,750.00
Thirty-year Collateral Trust.....	4½	June, 1939	1,000,000.00	93.25	932,500.00
Armour & Co. Real Estate First Mortgage ..					
Baltimore & Ohio R. R. Refunding and General Mortgage Series "A"	5	Dec., 1995	650,000.00	99.75	648,375.00
Canada Southern Ry. Consolidated Mortgage Series "A"	5	Oct., 1962	37,000.00	100.	37,000.00
Chicago & Alton R. R. Refunding Mortgage.	3	Oct., 1949	551,000.00	65.	358,150.00
Chicago & Alton Ry. First Lien (Certificates of Deposit)	3½	July, 1950	854,000.00	53.	452,620.00
Chicago City & Connecting Railways Collateral Trust (Certificates of Deposit)	5	Jan., 1927	1,305,000.00	52.	678,600.00
Chicago, Milwaukee & St. Paul Ry. General Mortgage Series "A"	4	May, 1989	30,000.00	97.	29,100.00
Chicago, Milwaukee & St. Paul Ry. General Mortgage Series "C"	4½	May, 1989	500,000.00	103.	515,000.00
Chicago, Milwaukee & St. Paul Ry. Debenture (Certificates of Deposit)	4	July, 1934	450,000.00	52.50	236,250.00
Chicago, Milwaukee & St. Paul Ry. General and Refunding Mortgage Series "A" (Certificates of Deposit)	4½	Jan., 2014	500,000.00	52.50	262,500.00

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Chicago, Milwaukee & St. Paul Ry. Receivers Equipment Trust Series "D"	5	\$133,000 due Aug. 1 each year 1928-40	1,729,000.00	98.25	1,698,742.50
Chicago & North Western Ry. Sinking Fund Debenture	5	May, 1933	80,000.00	102.	81,600.00
Chicago Railways Co. First Mortgage	5	Feb., 1927	500,000.00	97.	485,000.00
Cleveland, Cincinnati, Chicago & St. Louis Ry. St. Louis Division First Collateral Trust	4	Nov., 1920	73,000.00	90.	65,700.00
Cleveland, Cincinnati, Chicago & St. Louis Ry. General	4	June, 1923	700,000.00	83.893	587,250.00
Cleveland Short Line Ry. First Mortgage	4½	Apr., 1921	500,000.00	95.	475,000.00
Colorado Industrial Co. First Mortgage	5	Aug., 1934	2,050,000.00	80.	1,640,000.00
Dominion of Canada, Government of, Fifteen-year	5	Apr., 1931	500,000.00	94.565	472,825.00
Erie R. R. General Mortgage Convertible Fifty-year Series "B"	4	Apr., 1953	1,065,000.00	74.7175	795,742.30
Illinois Central R. R. Refunding Mortgage	4	Nov., 1955	300,000.00	87.	261,000.00
Illinois Central R. R. Equipment Trust Certificates Series "M"	4½	\$80,000 due May 1 each year 1929-41			
Interborough Rapid Transit Co. First and Refunding Mortgage (Stamped)			1,040,000.00	98.50	1,024,400.00
Interstate Natural Gas Co. Inc. First Mortgage Ten-Year Sinking Fund with warrants attached	5	Jan., 1966	1,750,000.00	96.8571	1,695,000.00
	6	July, 1936	2,000,000.00	105.	2,100,000.00

EXHIBIT I—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
Lake Erie & Western R. R. Second Mortgage	5	July, 1941	\$100,000.00	100.	\$100,000.00
Lake Shore & Michigan Southern Ry. First Mortgage.	3½	June, 1997	926,000.00	87.	805,620.00
Lake Shore & Michigan Southern Ry. Debenture.	4	May, 1931	1,673,000.00	92.	1,539,160.00
Missouri, Kansas & Texas R. R. Prior Lien Series "A"	5	Jan., 1962	331,250.00	78.5	260,031.25
Missouri, Kansas & Texas R. R. Prior Lien Series "B"	4	Jan., 1962	331,250.00	64.5	213,656.25
Missouri, Kansas & Texas R. R. Convertible Adjustment Series "A"	5	Jan., 1967	96,800.00	61.5	59,532.00
Morris & Essex R. R. First and Refunding Mortgage.	3½	Dec., 2000	175,000.00	82.75	144,812.50
Mutual Fuel Gas Co. First Mortgage.	5	Nov., 1947	250,000.00	100.	250,000.00
National Railways of Mexico Prior Lien Fifty-Year Sinking Fund.	4½	July, 1957	50,000.00	60.3275	30,163.75
Secured 6% Notes for coupon due January 1, 1914.		Jan., 1933	1,125.00	59.	663.75
Certificate Series "A" Interest in arrears.			7,357.50	5.50	404.66
Certificate Series "B" Interest in arrears.			13,500.00	.50	67.50
New York Central Lines Equipment Trust of 1913.	4½	Jan., 1928	36,000.00	99.0393	35,654.15

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New York Central & Hudson River R. R. Thirty-Year Debenture.....	4	May, 1934	330,000.00	88.45	291,885.00
New York, Chicago & St. Louis R. R. First Mortgage.....	4	Oct., 1937	35,000.00	95.	33,250.00
New York, Chicago & St. Louis R. R. Debenture.....	4	May, 1931	1,303,000.00	87.	1,133,610.00
New York Connecting R. R. First Mortgage. Northern Pacific Ry. Refunding and Improvement Mortgage Series "A".....	4½	Aug., 1953	500,000.00	95.69073	478,453.65
Pennsylvania R. R. Consolidated Mortgage Sterling.....	4½	July, 2047	390,000.00	91.577	357,150.00
Pennsylvania R. R. General Mortgage.....	4	May, 1948	£2,400.00	99.	11,880.00
Pennsylvania R. R. General Equipment Trust Certificates Series "D".....	4½	June, 1965	\$1,500,000.00	98.25	1,473,750.00
	4½	\$30,000 due May 15 each year 1929-41			
Philadelphia & Reading Coal & Iron Co. Refunding Sinking Fund.....	5	Jan., 1973	390,000.00	98.50	384,150.00
Pittsburg, Cincinnati, Chicago & St. Louis Ry. Consolidated Mortgage Series "I".....	4½	Aug., 1963	167,000.00	94.25234	157,401.42
Reading Co. General and Refunding Series "A".....	4½		500,000.00	103.	515,000.00
Rutland R. R. First Consolidated Mortgage	4½	Jan., 1997	333,000.00	94.25	313,852.50
St. Louis—San Francisco Ry. Prior Lien Series "A".....	4½	July, 1941	25,000.00	90.	22,500.00
Seaboard Air Line Ry. Adjustment Mortgage.....	4	July, 1950	1,500,000.00	72.75	1,091,250.00
	5	Oct., 1949	455,000.00	77.	350,350.00

EXHIBIT I—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
Southern Pacific Co. Equipment Trust Certificates Series "I".....	4½	\$100,000 due June 1 1931-41	\$1,100,000.00	98.50	\$1,083,500.00
Southern Pacific R. R. First and Refunding Mortgage.....	4	Jan., 1955	100,000.00	86.	86,000.00
Standard Oil Co. (New Jersey) Twenty- year Gold Debentures.....	5	Dec. 15, 1946	10,000,000.00	100.5	10,050,000.00
United States Fourth Liberty.....	4½	Oct. 15, 1938	1,075,000.00	93.21347	1,002,044.80
Wabash R. R. Second Mortgage.....	5	Feb., 1939	120,000.00	97.8	117,360.00
Washington Ry. & Electric Co. Consolidated Mortgage.....	4	Dec., 1951	450,000.00	83.5	375,750.00
Western Maryland R. R. First Mortgage.....	4	Oct., 1952	1,032,000.00	78.8913	814,158.76
TOTAL BONDS.....	\$39,213,166.74

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STOCKS

NAME	NUMBER OF SHARES	FOUNDATION'S LEDGER VALUE PER SHARE	FOUNDATION'S TOTAL LEDGER VALUE
American Ship Building Co. Common.....	24,260	\$54.173537	\$1,314,250.00
Anglo-American Oil Co., Ltd. (Par £1) Voting.....	366,517	18.874803	6,917,936.32
Anglo-American Oil Co., Ltd. (Par £1) Non-voting.....	122,172	18.874803	2,305,972.49
Atchison, Topeka & Santa Fe Ry. Preferred.....	5,000	98.25	491,250.00
Atchison, Topeka & Santa Fe Ry. Common.....	21,100	95.2563	2,009,908.33
Atlanta, Birmingham & Coast R. R. Preferred.....	4,062	94.	381,828.00
The Buckeye Pipe Line Co. (Par \$50).....	49,693	100.	4,969,300.00
Central National Bank, Capital.....	950	177.8538	168,961.10
Chehalis & Pacific Land Co. Capital.....	220	9.775	2,150.69
Chicago City & Connecting Rys. Participation Certificates Preferred.....	17,530	15.	262,950.00
Chicago City & Connecting Rys. Participation Certificates Common.....	10,518	2.	21,036.00
Chicago & Eastern Illinois Ry. Preferred.....	3,000	34.	102,000.00
Cleveland Arcade Co. Capital.....	2,500	98.6222	246,555.56
Cleveland Trust Co. Capital.....	532	190.860	101,537.62
Colorado & Southern Ry. First Preferred.....	4,800	54.	259,200.00
Consolidated Gas Co. of New York Cumulative Preferred.....	13,333	91.75	1,223,302.76
Consolidated Gas Co. of New York Common (No par value).....	20,000	62.78244	1,255,648.96
Continental Oil Co. (Par \$10).....	100,000	6.951916	695,191.60
Cumberland Pipe Line Co.	6,000	7.6666	46,000.00
Eureka Pipe Line Co.	12,357	162.	2,001,834.00
Galena-Signal Oil Co. Preferred.....	4,193	100.	419,300.00
Galena-Signal Oil Co. Common.....	20,000	15.051825	301,036.54
Indiana Pipe Line Co. (Par \$50).....	24,845	90.1111	2,238,810.28

EXHIBIT I—Continued

NAME	NUMBER OF SHARES	FOUNDATION'S LEDGER VALUE PER SHARE	FOUNDATION'S TOTAL LEDGER VALUE
Kanawha & Hocking Coal & Coke Co. Preferred.	202	100.	\$20,200.00
Kanawha & Hocking Coal & Coke Co. Common.	668	90.953	60,756.40
Manhattan Ry. Capital (Modified Guarantee)	10,000	100.	1,000,000.00
Missouri, Kansas & Texas R. R. Co. 7% Preferred Series "A"	9,531	40.	381,240.00
National Transit Co. (Par \$12.50)	126,481	28.5	3,604,708.50
New York Transit Co.	12,392	101.	1,251,592.00
Northern Pacific Ry. Common.	700	91.7625	64,233.75
Northern Pipe Line Co.	9,000	95.	855,000.00
Père Marquette Ry. Preferred.	5,740	54.56502	313,204.35
Provident Loan Certificates (\$1000 par)	242	100.	242,000.00
The Solar Refining Co.	9,076	92.5035	839,561.76
Southern Pipe Line Co. (Par \$50)	24,845	53.	1,316,785.00
South West Pennsylvania Pipe Lines	8,000	125.	1,000,000.00
Standard Oil Co. (Indiana) (Par \$25)	460,760	43.35	19,973,946.00
Standard Oil Co. (New Jersey) Common (Par \$25)	1,072,750	34.835714	37,370,012.50
The Standard Oil Co. (Ohio) Common (Par \$25)	135,648	25.50	3,459,024.00
The Standard Oil Co. (Ohio) Preferred Non-voting Cumulative.	17,088	106.	1,811,328.00
Tilden Iron Mining Co. Capital.	1,780	27.35	48,683.46
Union Tank Car Co. Capital.	60,000	26.768133	1,606,087.97
Western Pacific R. R. Corporation Preferred	28,609	30.705971	878,467.15
Wilson Realty Co. Capital.	591	100.	59,100.00
Woman's Hotel Co. (In Liquidation)	300	.....	.....
TOTAL STOCKS.	\$103,891,891.09

SUMMARY

Bonds.....	\$39,213,166.74
Stocks.....	103,891,891.09
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TOTAL LEDGER VALUE OF INVESTMENTS.....	\$143,105,057.83
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